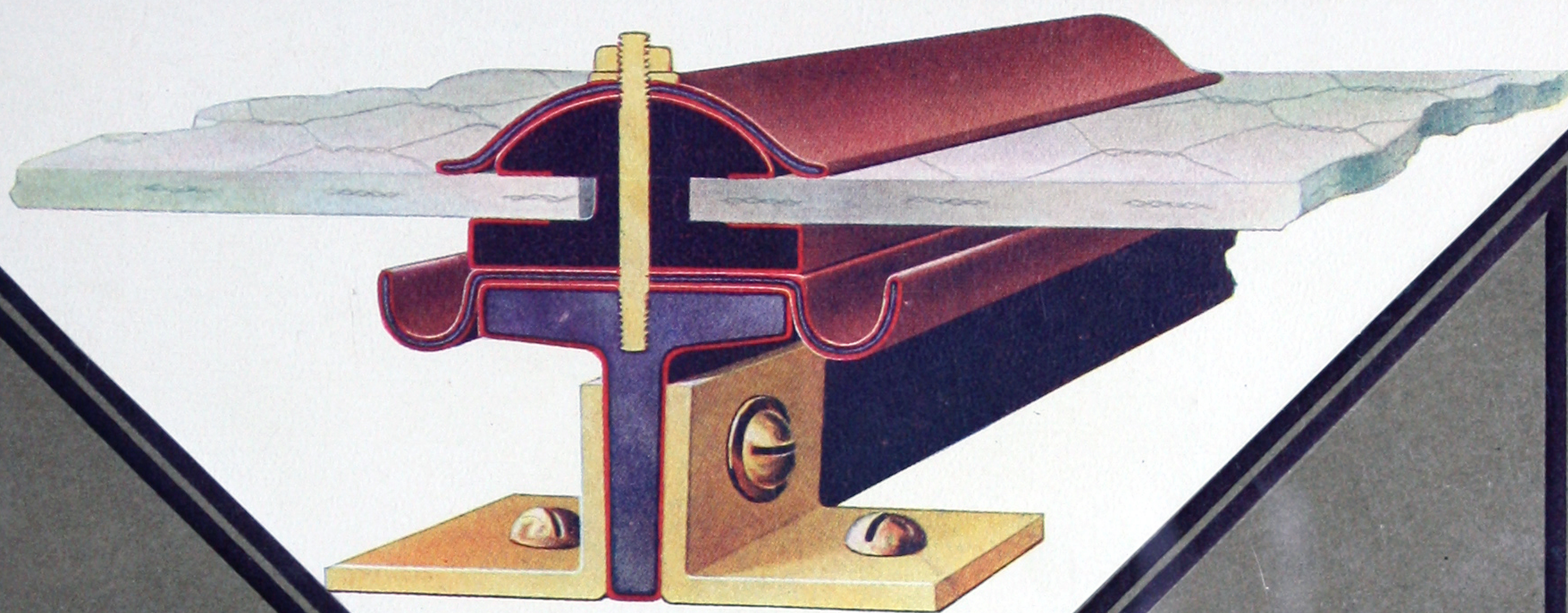


70-25

Robertson Glazing Construction



HH ROBERTSON CO
BUILDING PRODUCTS BUILDING PRODUCTS
Pittsburgh, U.S.A.

Robertson
Cleaning Construction

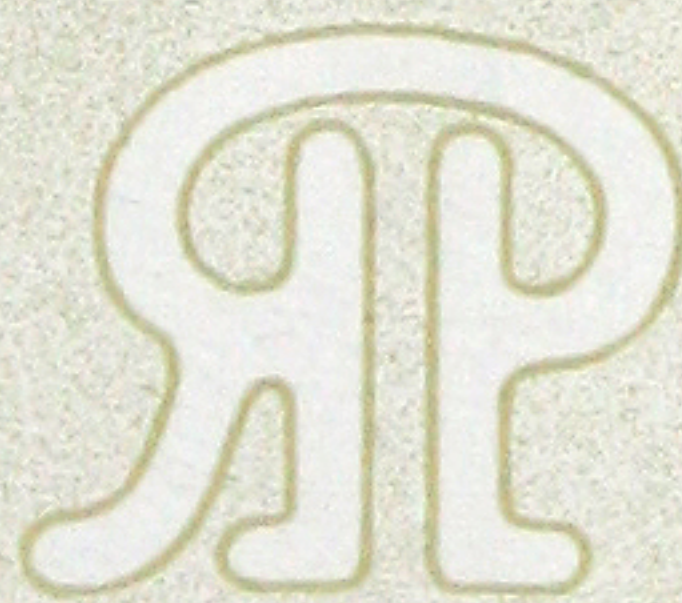
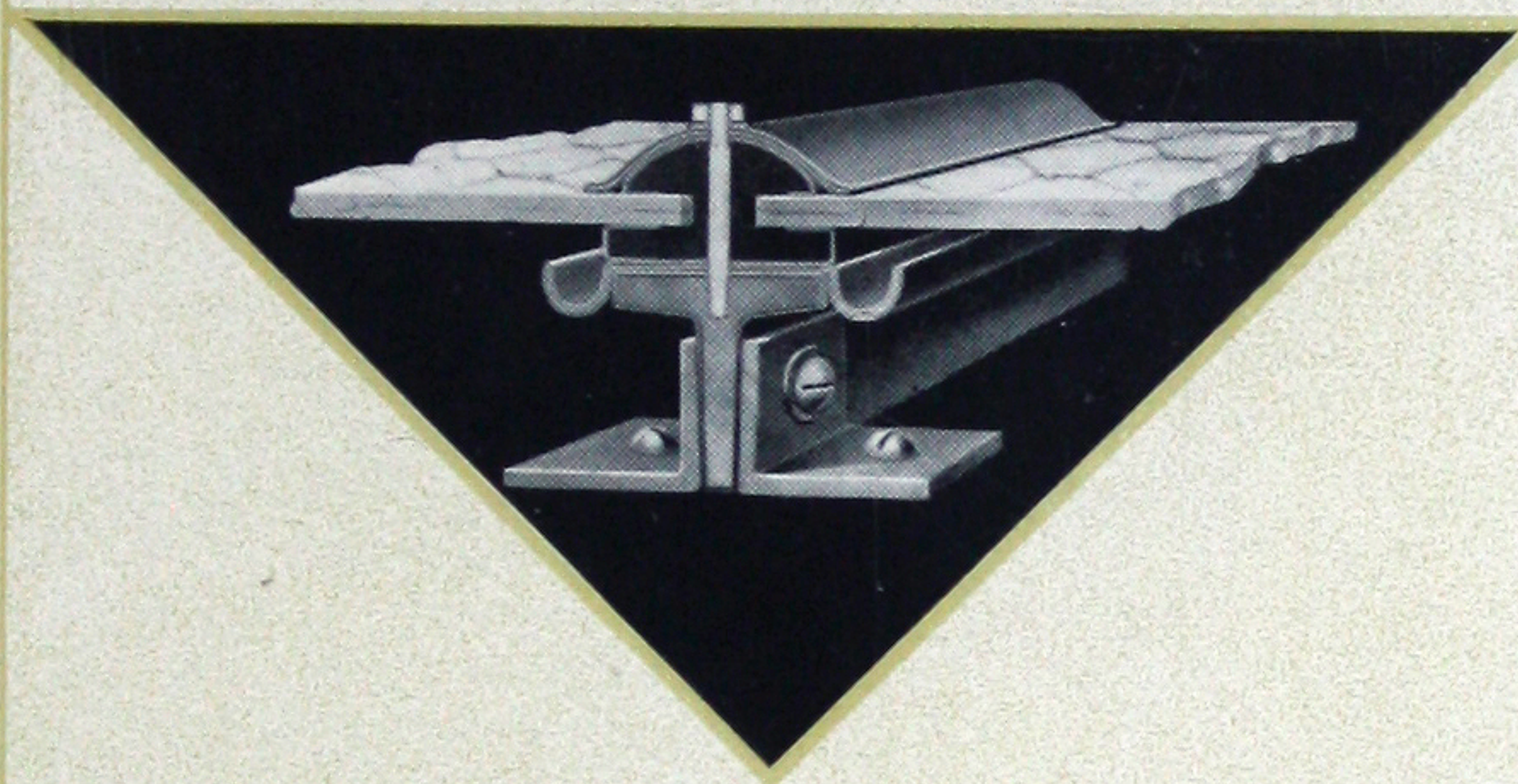


ROBERTSON
BIRMINGHAM, U.S.A.

Robertson Glazing Construction

(Made of Robertson Process Metal)

*For Use in all Types of
Industrial, Commercial
and Educational Buildings,
Residences and Hospitals*



BULLETIN NO. 61

JULY 1919

HH ROBERTSON CO
BUILDING PRODUCTS BUILDING PRODUCTS

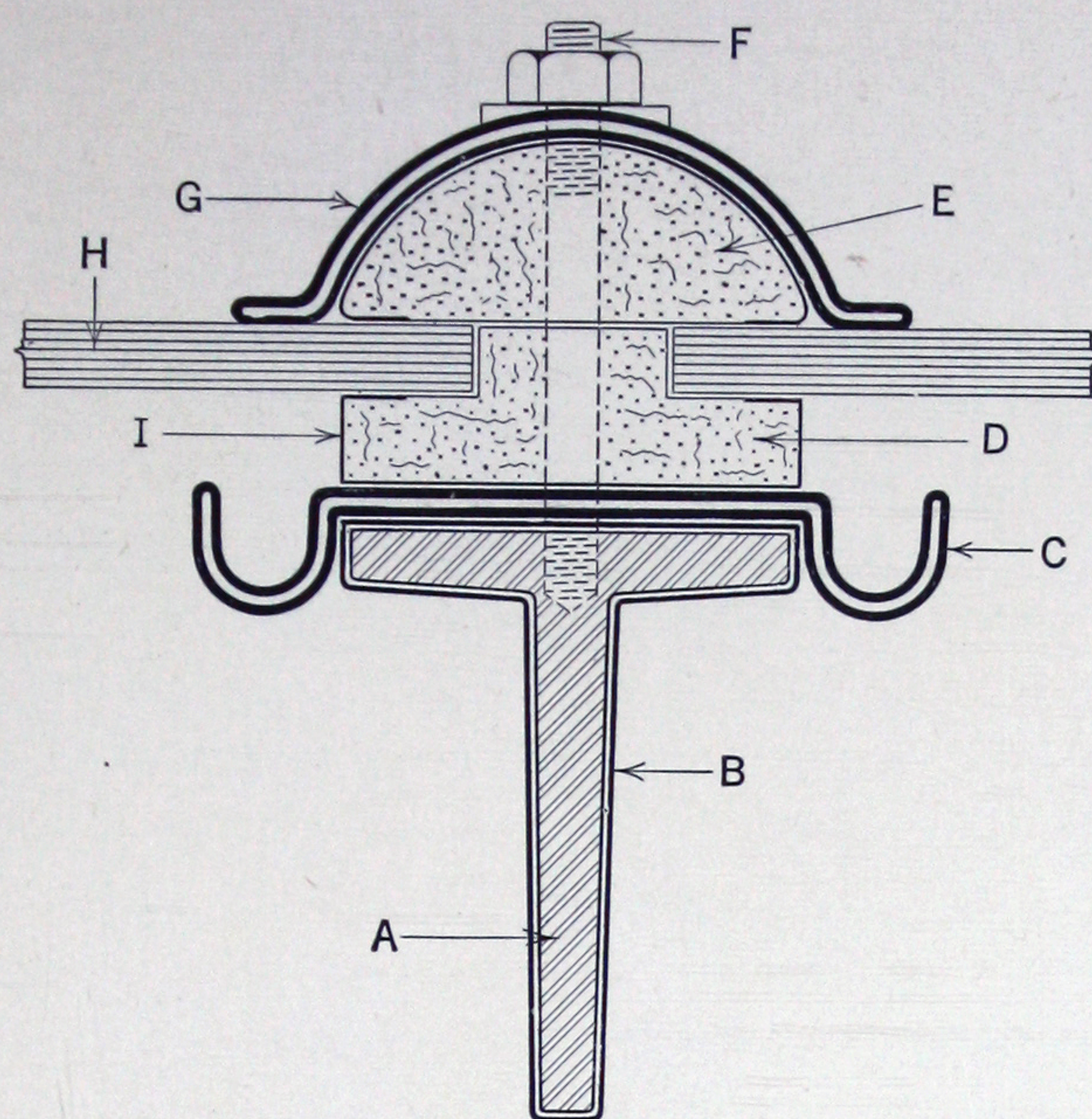
FORMERLY ASBESTOS PROTECTED METAL COMPANY

Pittsburgh, U.S.A.

H. H. ROBERTSON COMPANY, PITTSBURGH, PA.

Copyright 1919
H. H. Robertson Company
Pittsburgh, Pa., U. S. A.





Condensed Description of Robertson Skylight Components

A. Standard Rolled Steel Tee, Angle or Channel Bar-Beam. Always initially stiff enough, regardless of span, to carry its load without deflection—the main cause of glass breakage. See pages 24 and 27.

B. Robertson Process Protective Coating. Acid, alkali, fume and moisture-proof; heat and fire resisting. Absolutely preserves steel bar-beam from corrosion and consequent loss of initial stiffness. Obviates expensive periodical painting.

C. Robertson Process Metal Condensation Gutter. Not a part of the beam. Collects condensation from glass. Cannot corrode. Never needs painting.

D. Asphaltic Glass-Cushion and Separator. Provides a non-absorbent, resilient, permanent and insulating bed for glass. Positively keeps glass from contact with hard substances, even the bolts, and gives it a broad and continuous bearing; hence preventing destructive strains. It is composed of very high grade asphalt and asbestos.

E. Asphaltic Cap-Filler. Leaves no hollow spaces. Follows contour of glass sur-

face, and adheres to it; hence absolutely excludes water. Made of same material as the cushion.

F. Cap Bolt and Nut. Clamps the glass between flexible cushion and filler, insuring permanently water-proof joints. Supports cleaner's bridge planks without straining glass. Usually made of brass.

G. Robertson Process Metal Cap. Protects filler and distributes pressure evenly and continuously. Spring tension locks the cap nuts. Of pleasing appearance, and does not allow snow and dirt to lodge.

H. Glass. As specified.

I. Saturated Asbestos Felt.

NOTE; In sawtooth and continuous monitor sash, the condensation gutter illustrated above (C) is usually omitted.

For detailed drawings see pages 28 to 38.

The bar (A) may be merely painted if desired. C and G made of galvanized iron or copper if ordered.



Introduction

GLASS is brittle and subject to both internal and external strains. It is the most fragile and expensive material used in roof-glazing. The grades of glass which are usually employed for such purposes are not made of the best raw materials nor are they as carefully produced as are those used for most other services. Broken skylight glass is a constant menace to those who work or pass beneath it. To the owner it is a cause of liability for loss of life or serious injury. Leakage through it results in damage to property beneath and in heavy maintenance or replacement cost. The chief causes of broken glass are deflection of the supporting members and improper cushioning and separating methods.

Given an adequately rigid and durable foundation, skylight glass in particular must further be supplied with a non-absorbent, resilient, insulating and continuous bedding and separator, if avoidable glass breakage is to be prevented.

That the years of studious effort, practical experience and close observation by the engineers and chemists of the H. H. Robertson Company have resulted in a highly perfected and trustworthy glazing construction, should be self-evident from the following technical description and detailed drawings. It is proven by the remarkable list of users printed at the end of this bulletin, many of whom have favored us with numerous repeat orders.



PACKARD MOTOR CAR COMPANY, DETROIT, MICH.

Albert Kahn, Architect, Detroit., Austin & Co., Contractors.

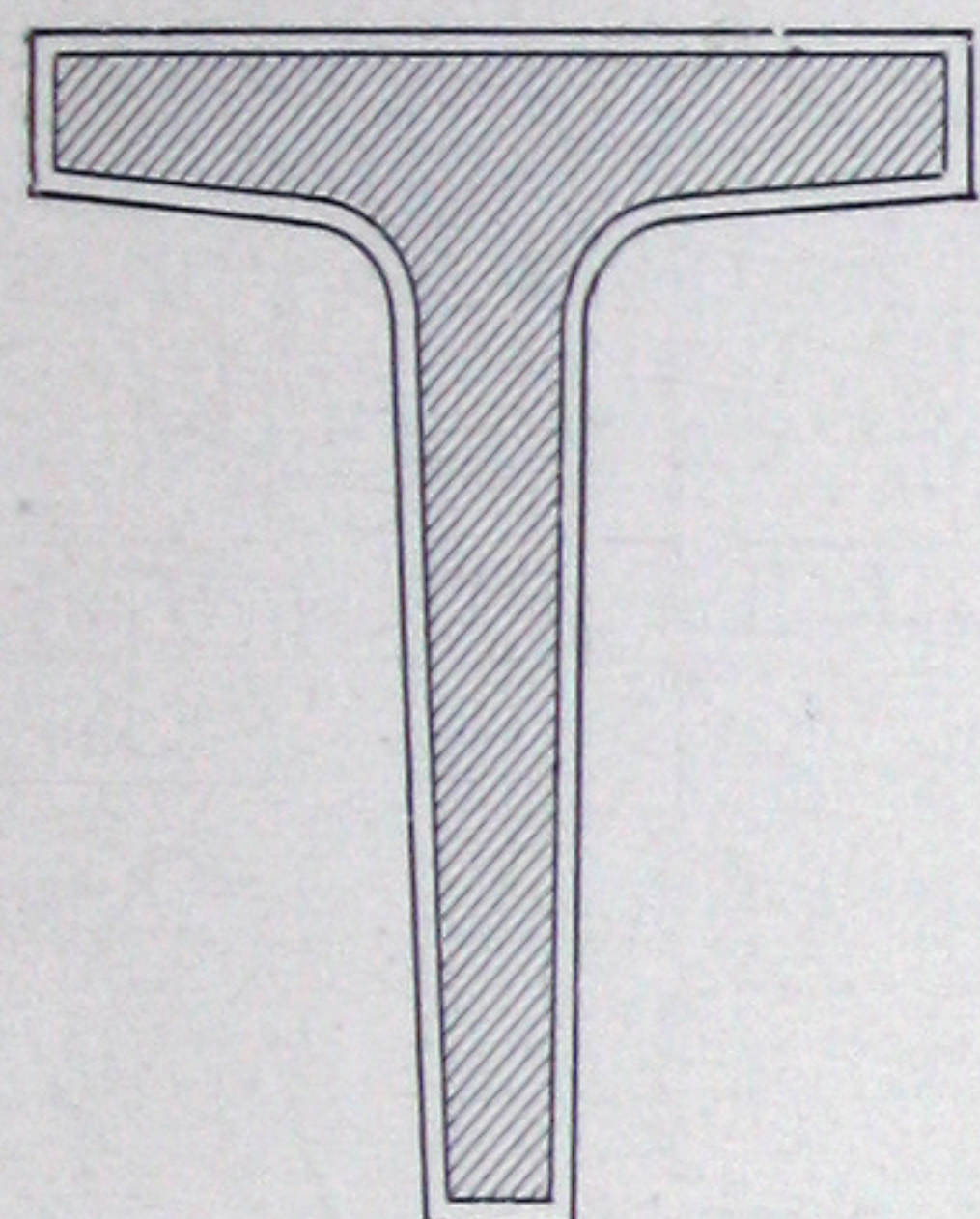
An interior view showing the Robertson Glazing Construction, embodying the use of 11,600 square feet. It is one of several orders from this Company.



Robertson Glazing Construction

A description of the principles and materials embodied follows:

Bar Beam The rolled steel bar A (see page 3), is a plain, usually standard, section, varying in size and shape to meet different span requirements. See



pages 24 and 27, illustrating tees, angles and channels used and giving the "Maximum Bar Spans" for same. The maximum deflection under normal live loads can be readily

determined and its moment of inertia found in the various hand-books. The maximum deflection of the Robertson bar, $\frac{1}{30}$ " per lineal foot, is never such that glass breakage will result from lack of initial bar stiffness. Other steel skylight bars are designed as gutters, to carry away leakage and condensation, rather than as load-carrying beams. They are generally thin, rust-inviting steel water troughs. Their stiffness is often questionable and difficult to calculate, and, even if they have sufficient *initial* stiffness, obviously they cannot retain it for the reason that as corrosion occurs the bars become weaker and deflection is inevitable.

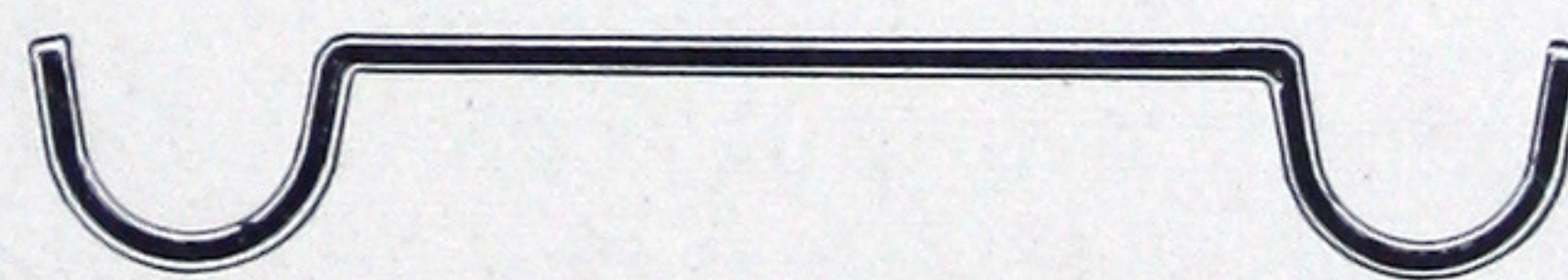
Replacement of broken glass is the principal item of maintenance cost and deflection of the bar is the main cause of glass breakage.

There are occasional conditions for which galvanized iron caps and gutters and painted supporting bars may be considered sufficiently durable against corrosion. Robertson bars are readily adaptable to these conditions. Their exposed surfaces are accessible for inspection and repainting. This is not true of the water-trough and other types of bars with inaccessible surfaces, which cannot be repainted after installation of the glass.

Robertson bars of the smallest sectional area have greater thickness of metal than many others, hence they have longer life, as it would require much more time to corrode and weaken the thicker material.

We recommend that the bars be rust-proofed by the Robertson Process as described later in this bulletin. Ultimate economy is thereby assured. (See page 7.)

Condensation Gutters In skylight construction provision should be made to dispose of condensation. The Robertson design accomplishes this by



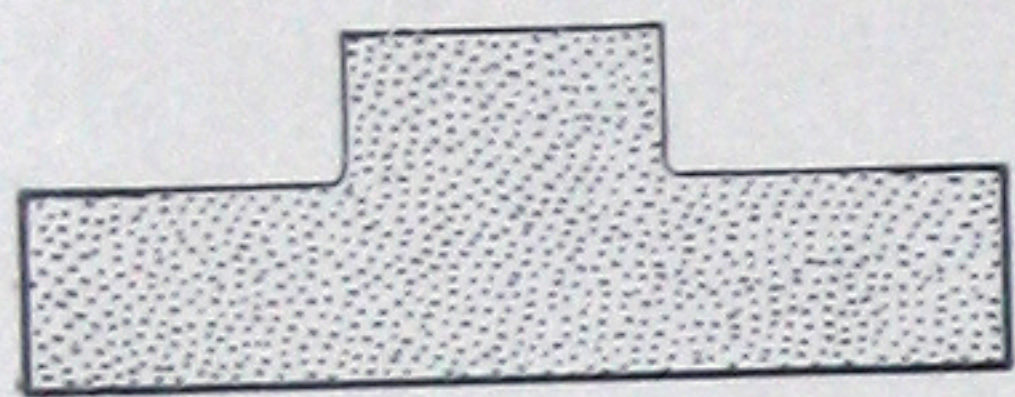
providing gutters, C, that fit snugly over the tops of the bars and carry the condensation away. They are not integral parts of the steel bars, but are entirely separate from them. They may be of any customary sheet metal such as galvanized iron or copper, but galvanized iron is not depend-



able and copper is expensive. Since the latter readily reacts with some acid fumes, it cannot be safely used in many cases. We recommend Robertson Process Metal. It is permanent under all conditions and for that reason is most economical.

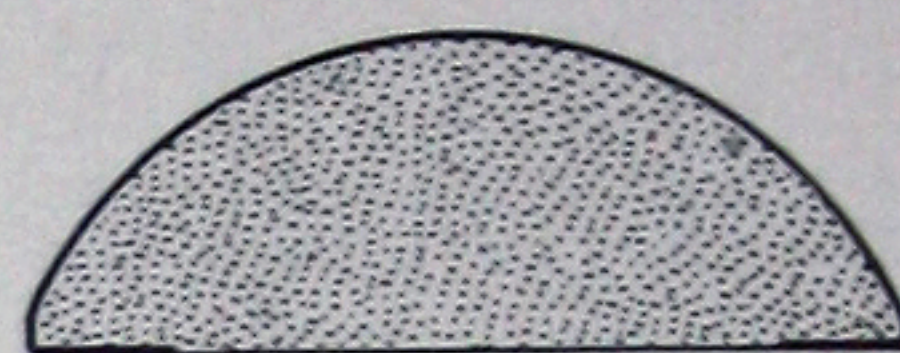
Glass Cushion

In addition to the deflection of supporting bars through insufficient initial stiffness, or weakening from corrosion, glass breakage or leakage is often caused by the use of improper bedding or cushion and separator for the glass to rest upon and sit between.



In the Robertson construction the glass rests directly upon the cushion, D, a special high grade asphaltic compound that provides a broad, continuous and perfect bed. This cushion is pliable, non-absorbent, resilient, insulating, durable and substantial. It lies below and continuously between the edges of the lights of glass, preventing their contact with all solid substances, even the bolts, thus avoiding destructive strains. It is protected from the action of light, heat and atmosphere by a layer of toughened, waterproofed, asbestos felt. Being non-absorbent it cannot retain moisture which would hasten the corrosion of the adjacent metal; danger from freezing is also entirely eliminated. This cushion has remarkable insulating properties that most effectively maintain the steel bars at the same temperature as the inside atmosphere, thus condensation is not apt to form on, or drip from them.

Cap Filler The edges of the lights of glass and the joints between them are covered and bridged with a half-oval section, E, of the asphaltic compound.



This filler, owing to its plastic character, enters all depressions and adheres to the glass instead of merely touching the high points of its rough surface. It provides a continuous perfect seal that prevents capillary attraction and renders it impossible for water, air, dirt or snow to penetrate.

The asphaltic compound of which both the glass-cushion and cap-filler are made is the result of exhaustive experiments. It differs in a great many respects from ordinary asphalt. By a special process it is so combined with other substances that it becomes the most efficient material known for the purpose. Owing to its many superior qualities it has been adopted for Robertson glazing construction in place of the lead and cork that were formerly used and found to be not wholly satisfactory. This filler does away with the hollow spaces in which fumes and moisture would collect with distinctive results.

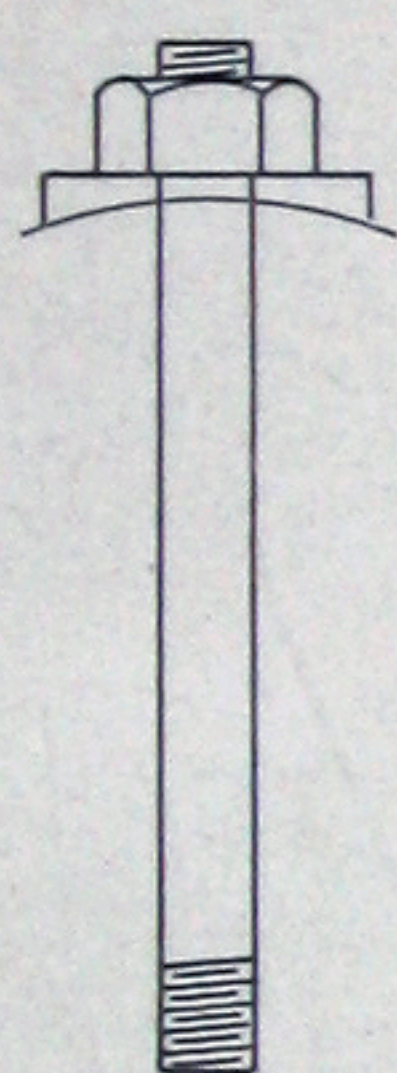
Caps The cap, F, protects the cap-filler. It may be made of any usual sheet metal, but, as explained in the case of condensation gutters, we recommend Robertson Process Metal as the most durable and economical.



The shape of the cap has been carefully designed with due regard to both

service and appearance. It projects only five-eighths of an inch above the surface of the glass and has no sharp angles; there is no place for the lodgment of dirt nor does it form fences to catch and hold snow and ice. Owing to its arch shape it is practical to screw down the cap-bolt nuts until the entire cap is under pressure and the nuts are tightly locked by the reacting pressure of the cap against them.

Cap Bolt The cap bolt, F, together with the nut and washer, is made of corrosion-resisting metal,



such as brass, phosphor bronze or sherardized steel. It is threaded and screwed securely into the bar. It extends upward through the condensation gutter, cushion, cap-filler and cap, thus binding the whole structure firmly in place and pressing the adhesive material into continuous contact with both surfaces of the glass.

The bolts are spaced at not more than fifteen inches between centres. They bear directly upon the load-carrying bars, and as the latter are of sufficient stiffness, bridge planks may be placed on the tops of the bolts, to facilitate the work of cleaning the glass, without putting any extra pressure upon it and without danger of breakage.

Rust-Proofing A most persistent enemy of glazed steel structures is rust. To insure the metal against its insidious action, adequate and permanent protection must be provided. Paint or galvanizing is neither permanent nor dependable, and in most cases where either of these

temporary protections is specified, proper inspection of the materials and their application is impractical.

When rust-proof glazing construction is desired (we do not say "rust-resisting"), Robertson bars and sheet metal parts are treated by the Robertson Process and covered and hermetically sealed with a special coating, B. The remarkable properties of Robertson Process coating can best be appreciated by briefly reviewing the materials used and the process employed.

The steel is first completely cleaned and then sealed by an unbroken covering of special asphaltic compound that long experience has proven to be a perfect protection against corrosion. To maintain the properties of this compound it is protected against the action of light, heat, solvents and abrasion, by a tough opaque covering of saturated pure asbestos felt. Finally, the felt is in turn protected by a coating of special fume-proof, moisture-proof and void-filling material, which hardens to an attractive glossy surface.

The complete built-up protective coating has about the same thickness as four pound sheet lead (about $\frac{1}{4}$ inch) but weighs much less. It is heat resisting and minimizes condensation. It is a *perfect insulator* and protects the steel from stray currents, galvanic action and variations of temperature. It is non-porous and not affected by acids nor alkalies. It is usually less expensive than copper and more durable because it is not affected by acid fumes. In proof of this claim there is one plant on which, after seven years service, this fume-proof material is intact under conditions where copper flashings, gutters and downspouts were reduced to



powder in less than two years. The owners have given us seven repeat orders, amounting in all to about 100,000 square feet of glazing. In another case it has remained in perfect preservation although continuously subjected to salt water atmosphere in combination with sulphuric, nitric and hydrofluoric acid fumes—an unusual combination of some of the greatest metal destroying agents known.

The Robertson Process of rust-proofing steel, after being on the market over twelve years, has become generally recognized as possessing advantages over every other method of accomplishing this previously elusive undertaking. It is based on extensive and elaborate experiments and practical tests. A trained corps of chemists and engin-

eers has carefully and systematically investigated the electro-chemical reactions that take place under ordinary conditions when rusting occurs. They have as carefully studied conditions that stimulate the reactions and cause an increasing amount of rust to form. Based upon the facts gained by this research work they formulated a method that in practice absolutely prevents the rusting of steel.

Slowly but surely they solved every difficulty and as a result are able to offer engineers, architects and others interested, a system of glazing construction for roof lighting purposes that is unequaled.

We invite tests and will give all the assistance possible to those who are interested.



ROESSLER & HASSLACHER CHEMICAL COMPANY, PERTH AMBOY, N. J.

This is one of several installations for this company. The skylights, roofing, and siding are of Robertson Process Metal.



Uses of Robertson Glazing Construction

THE glazing methods heretofore described in this bulletin, though pertaining largely to skylight work, are pre-eminently suited to other products, such as monitor sash, sawtooth fronts, etc., both single and double glazed.

Robertson Glazing Construction is widely used on all kinds of public, semi-public, amusement and industrial buildings. When made up with Robertson Process Metal it is particularly adapted to extreme fume and moisture conditions. It will give the maximum durability on chemical plants, foundries, silk and paper mills, weave sheds, dye-houses, etc.

Monitor and Sawtooth Sash

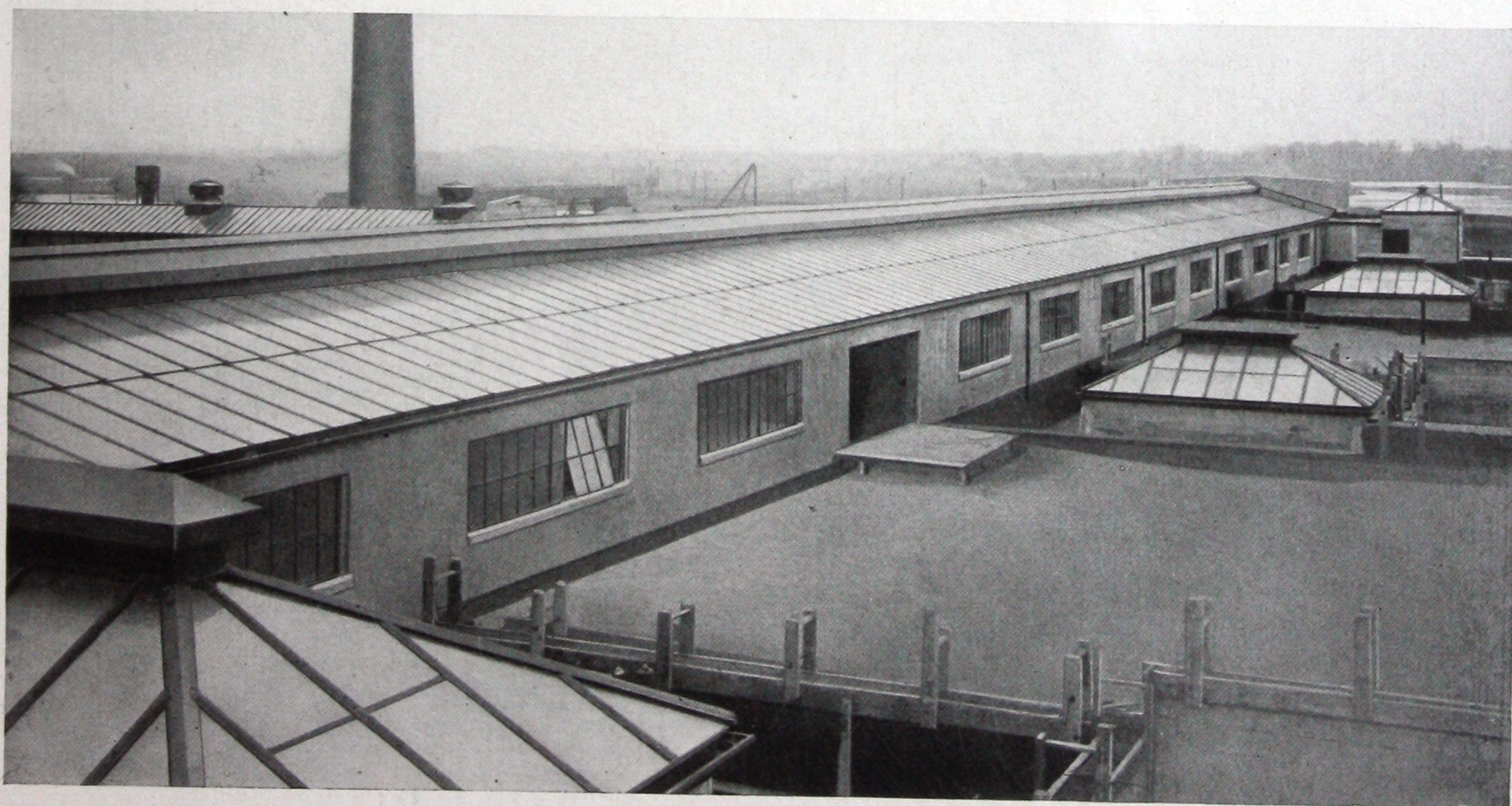
The Robertson Monitor Sash differs so little from the Robertson Skylight already described (in the omission of the bar condensation gutters) that it needs no further explanation. Its construction

and application are shown on pages 10, 20, 35, 36 and 37.

The vertical muntins will seldom be less than $1\frac{1}{2}" \times 1\frac{1}{2}" \times \frac{3}{16}"$ tees, which are stiffer than those generally used. Often they will be $1\frac{1}{2}" \times 2" \times \frac{3}{16}"$.

In the Robertson Monitor and Sawtooth Sash the steel members may be either painted or rust-proofed by the Robertson Process. Since Monitor Sash is used principally for ventilating purposes and, when open, is directly in the flowing currents of fume and moisture-laden air, it is essential that the light steel parts should be corrosion-proof if durability is desired.

Where corrosive conditions are severe, brass, bronze or other metal bolts or rivets are used, otherwise sherardized bolts or rivets are employed. Bronze pins are furnished for top-hung monitor sash hinges. Clips, malleable iron hinges and other small parts are generally painted, but may be sherardized and then specially painted



NATHAN MANUFACTURING COMPANY, FLUSHING, N. Y.
Only a small part of the installation of 10,300 feet of Robertson Glazing Construction is shown here.



and baked if desired. Brass for clips is occasionally used but is wholly unsuitable for some exposures.

Side Wall Sash

The H. H. Robertson Co. does not manufacture steel sash for side wall openings except where atmospheric conditions require that the steel members be made dependably corrosion-proof, or where top-hinged sash is required.

Double Glazing

Robertson Glazing methods are remarkably adaptable to double-glazed skylights, sawtooth and monitor sash, whether the object be to prevent heat radiation or condensation or both. Different requirements make different constructions necessary, and each case should have special consideration. In Robertson double glazing, dead air spaces are studiously avoided when condensation is to be prevented or taken care of so drippage on perishable goods cannot occur. See pages 34, 35 and 37.

Practical and large experience during recent years in connection with silk-mill, dye-house and similar work, has taught that perfect dead-air spaces are not obtainable except in the laboratory, and that they must be avoided in practice, anyway, or crushed glass will be the result. Air inlets to the spaces between lights of glass are essential, and they must be of proper size and location, depending upon the objects to be gained. Non-insulated metal glazing members constitute a direct path for the transmission of cold to a point of contact with warm moisture-laden interior air, hence condensation and corrosion rapidly result. Robertson glazing members are thoroughly insulated.

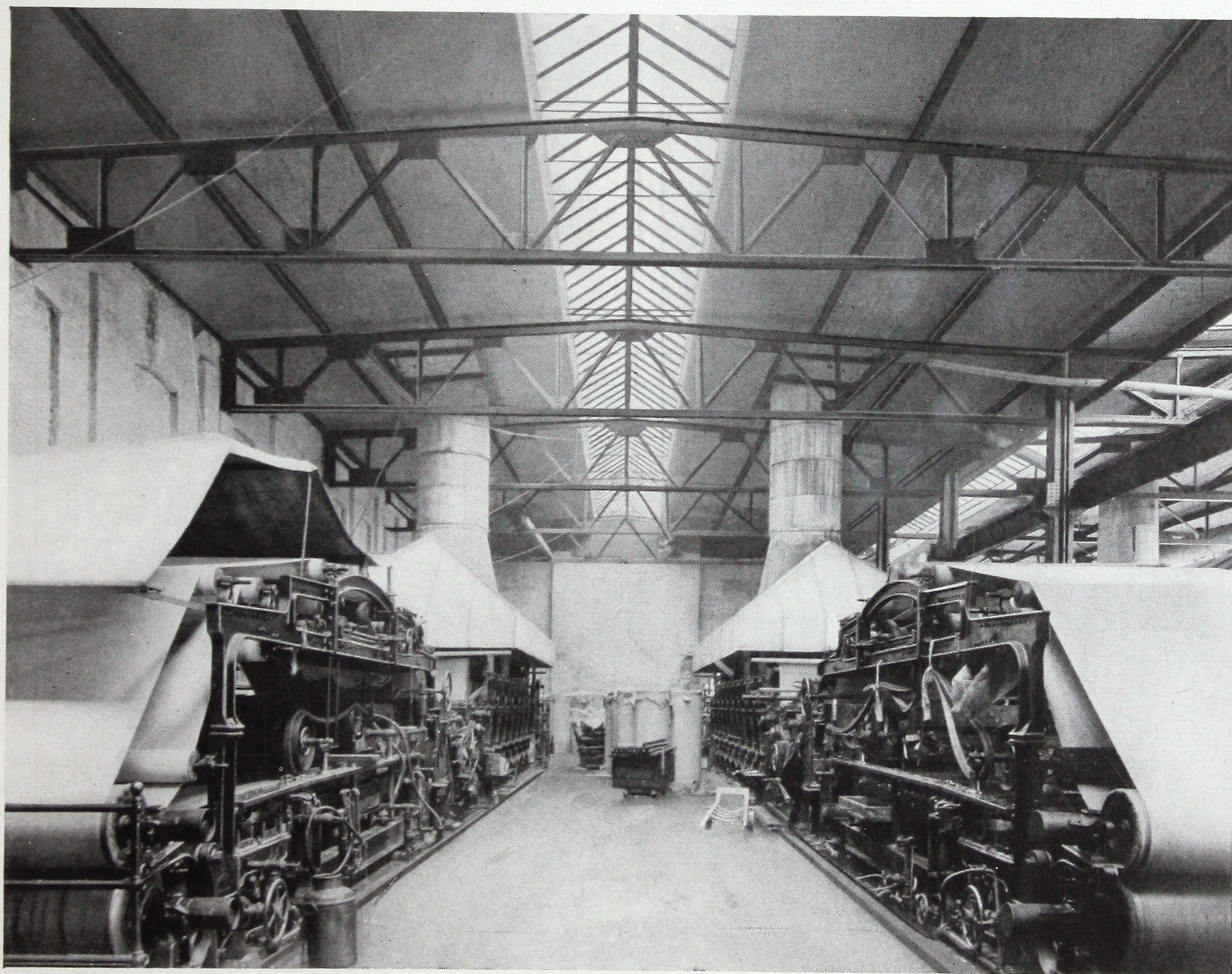
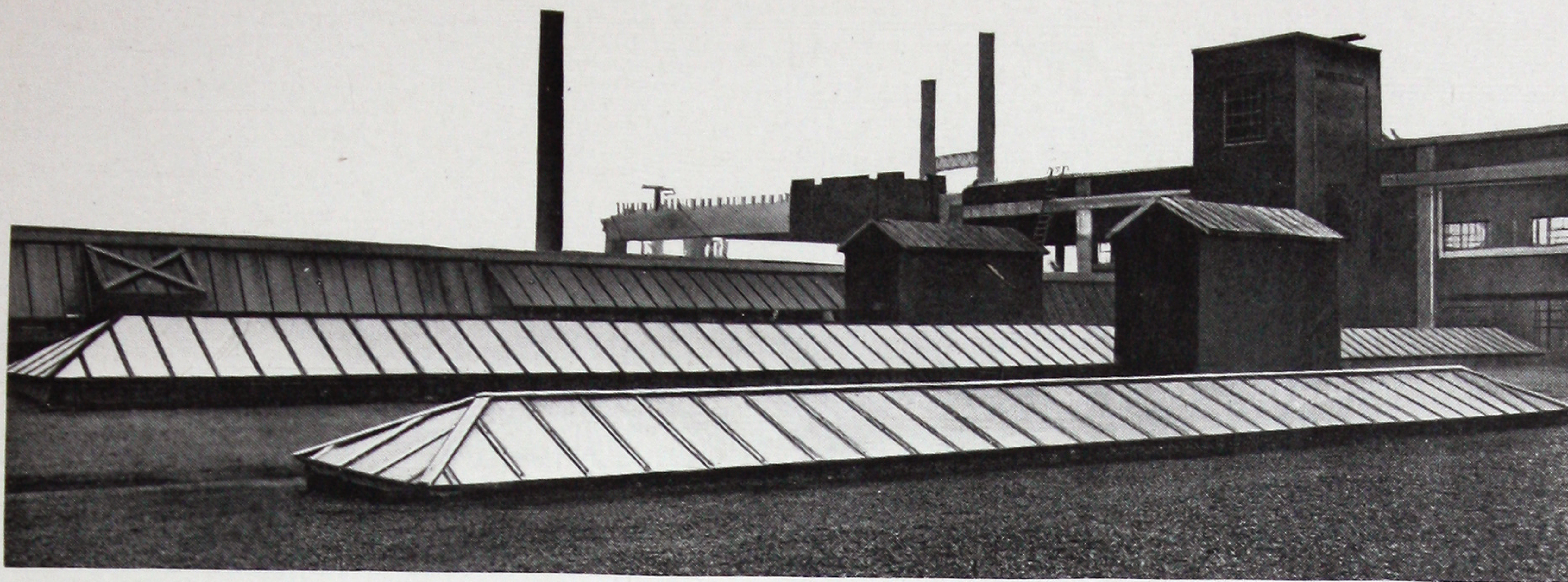
The problems involved in the prevention of heat radiation and condensation, as pertaining to glazed constructions, have not generally received deserved consideration, but have been particularly studied and provided for in Robertson Double Glazing.



DENVER GAS & ELECTRIC CO., DENVER, COLO.

Robertson Top-Hinged Sash and Skylight Construction is used on many of the most modern buildings of public service corporations throughout the country.





CHESTER PAPER COMPANY, CHESTER, PA.
Geo. F. Hardy, Mill Engr., New York City

Illustrating two of the Robertson Skylights and Robertson Paper Machine Hoods, installed at this plant. 20,000 cubic feet of steam per minute are exhausted from each of these hoods, and there is no condensation drip from the roof or skylights. The hood pipes are 5 feet in diameter and made of Robertson Process Metal.





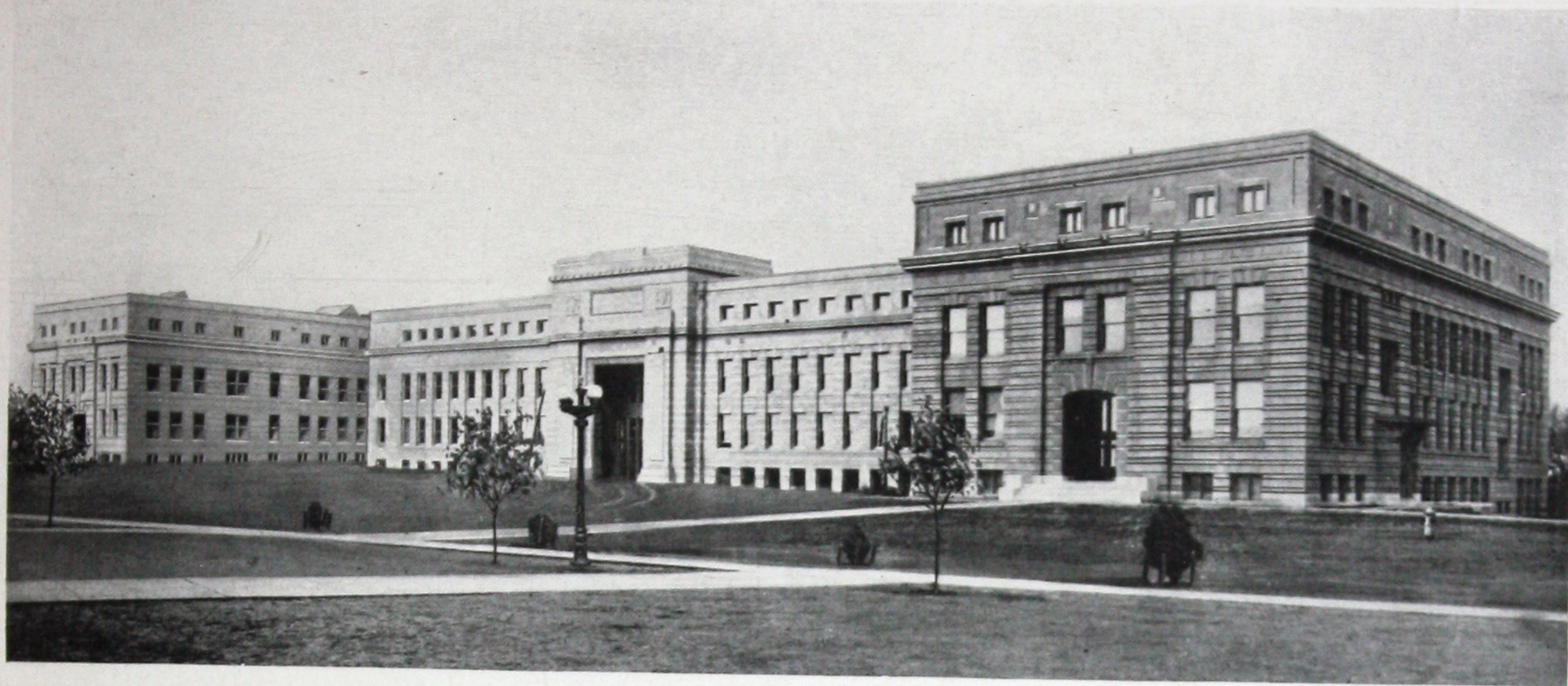
DOUGLAS COUNTY, WISCONSIN, COURT HOUSE.
James Royer, Architect, Urbana, Ill., Fleisher Construction Company, Contractors, Minneapolis
Robertson Skylight Construction is in use on this and many other notable public buildings.



UNIVERSITY OF ILLINOIS, SMITH MEMORIAL MUSIC HALL, URBANA, ILL.
Jas. M. White, Architect

Another splendid building on which Robertson Skylight Construction is in use.





UNIVERSITY OF KANSAS, ADMINISTRATION BUILDING.

R. L. Gamble, State Architect, Topeka, Kan. Olson-Magee Co., General Contractors, Kansas City, Mo.

This beautiful, permanent building is provided with Robertson Skylight Construction, as is also the State Normal School Building at Pittsburg, Kan.

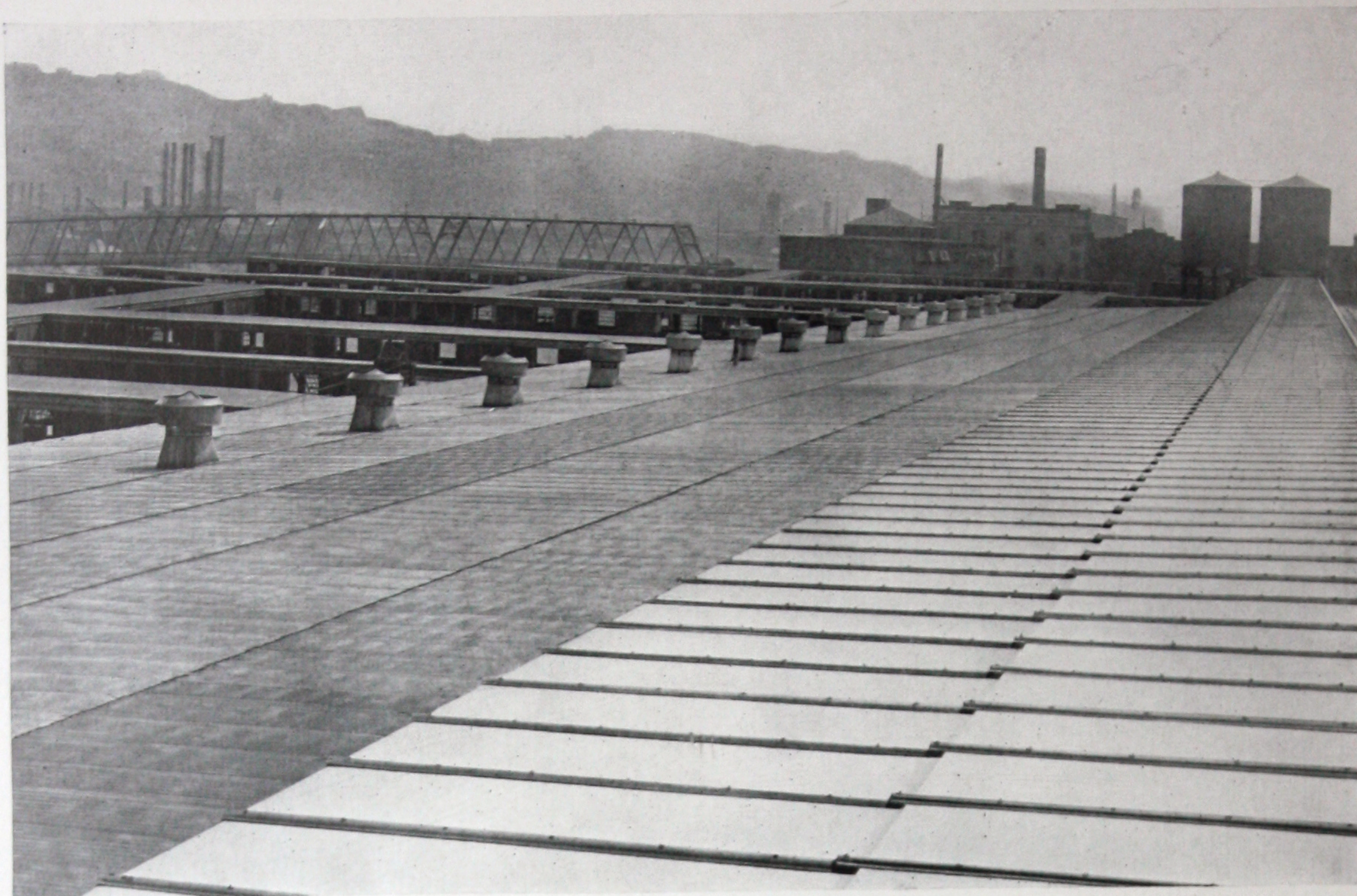


UNIVERSITY OF NEBRASKA, SOCIAL SCIENCE BLDG.

Coolidge & Hodgson, Architects, Chicago, Ill. Mr. Chas. E. Chowins, Supt. of Buildings. W. J. Assemnacher, General Contractor, Lincoln, Neb.

Robertson Skylight Construction measures up to the standards prevailing in the construction of the very highest class of buildings. Its use on the above building is only one of many such installations.





HERR'S ISLAND STOCK PENS OF THE PENNSYLVANIA RAILROAD, PITTSBURGH, PA.
Over 4,500 square feet of Robertson Glazing Construction and 97,500 square feet RPM Corrugated Sheets are here used.



BETHLEHEM STEEL COMPANY, SOUTH BETHLEHEM, PA.
Chas. E. Lehr, Chief Engineer. Robertson Skylight and Robertson Process Metal Roofing in use here.





INLAND STEEL COMPANY, INDIANA HARBOR, IND.

The use of Robertson Skylight Construction on the buildings of the leading steel manufacturers is common practice. Two of these installations are shown in this bulletin, one above and one on page 14.

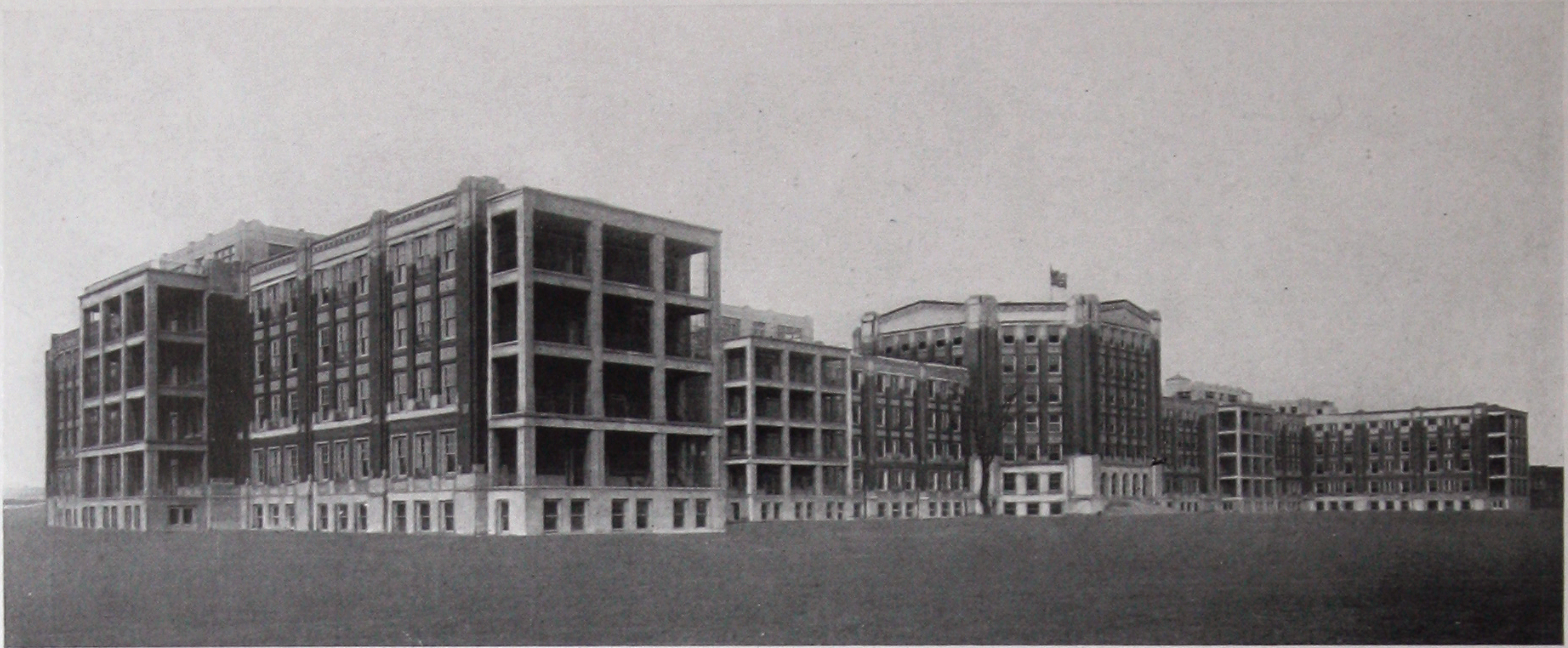


MICHIGAN STATE TELEPHONE COMPANY BUILDING, DETROIT, MICH.

Smith, Hinchman & Grylls, Architects, Detroit, Mich.

Robertson Skylight Construction and Ventilators, made of Robertson Process Metal, are in use on this large office building.





HENRY FORD HOSPITAL, DETROIT, MICH.
A. A. Albrecht Company, General Contractors, Detroit.

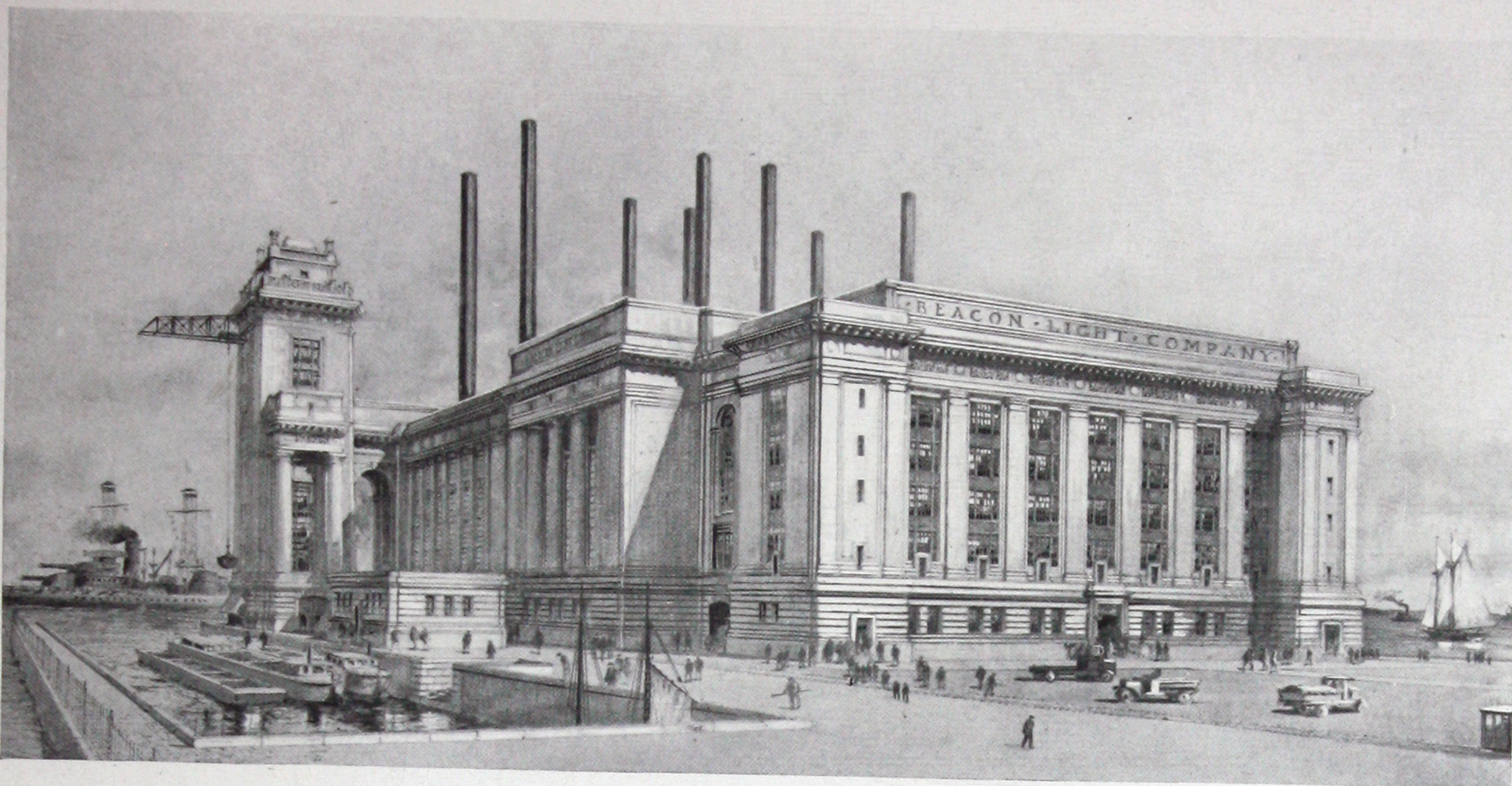
This is one of the largest, most modern and best equipped hospitals in the world. Robertson Skylight Construction is used.



HOTEL TRAYMORE, ATLANTIC CITY, N. J.
Price & McLanahan, Architects, Philadelphia.

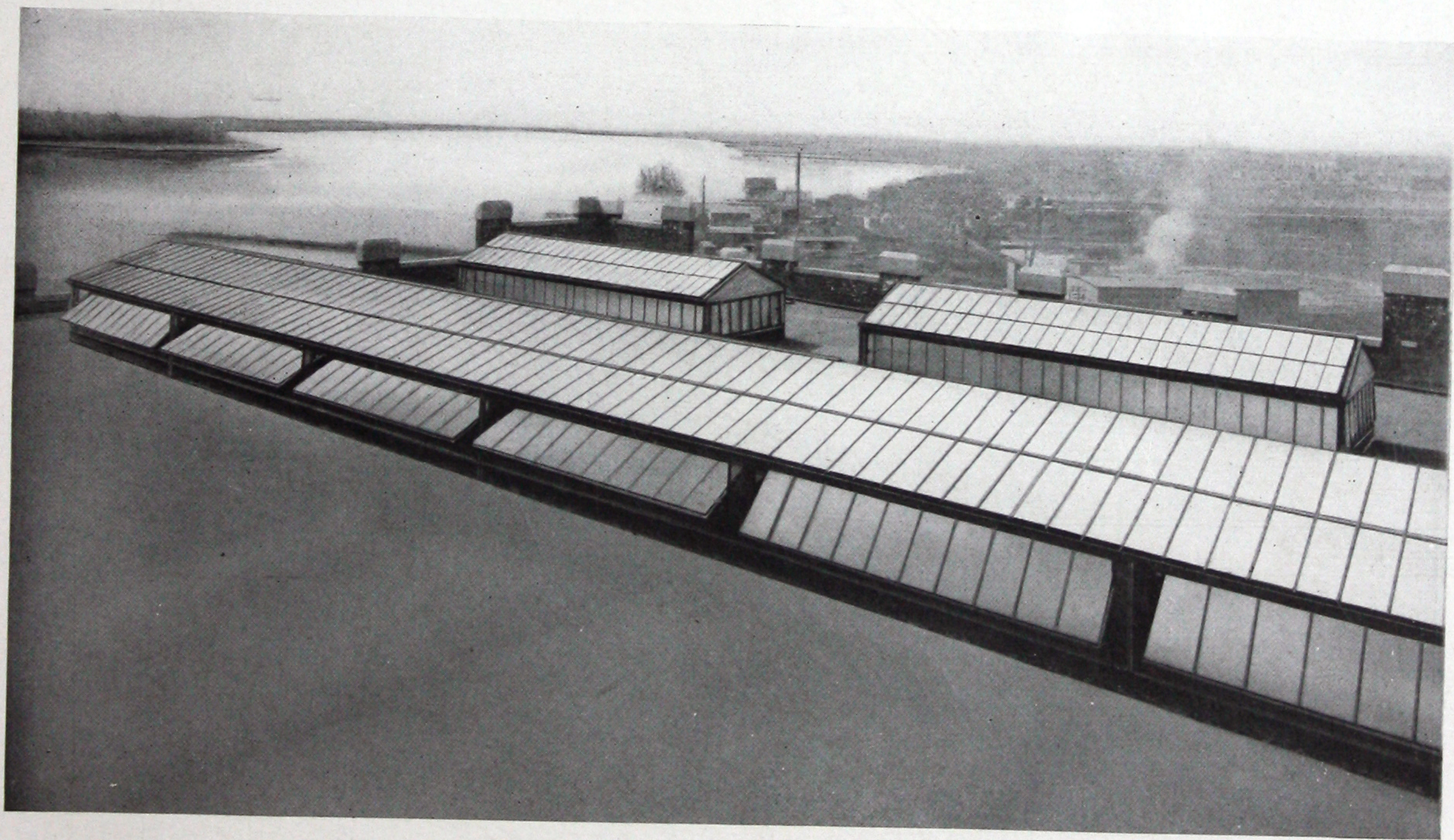
Robertson skylight in use here on sun parlor of Old Colony Club Rooms.





BEACON LIGHT COMPANY'S POWER HOUSE, CHESTER, PA.
Cost \$15,000,000.00. John H. Windrim, Architect, Philadelphia, Chester Construction & Contracting Company,
General Contractors, Philadelphia, Pa.

This is one of the newest and most costly public service corporation buildings in the United States.
Robertson Skylights (21,000 ft.) contribute to its substantial construction.



THE DETROIT EDISON COMPANY, DETROIT, MICH.
Connor's Creek Power House.

This is one of numerous installations of Robertson Skylight Construction on prominent Detroit buildings.



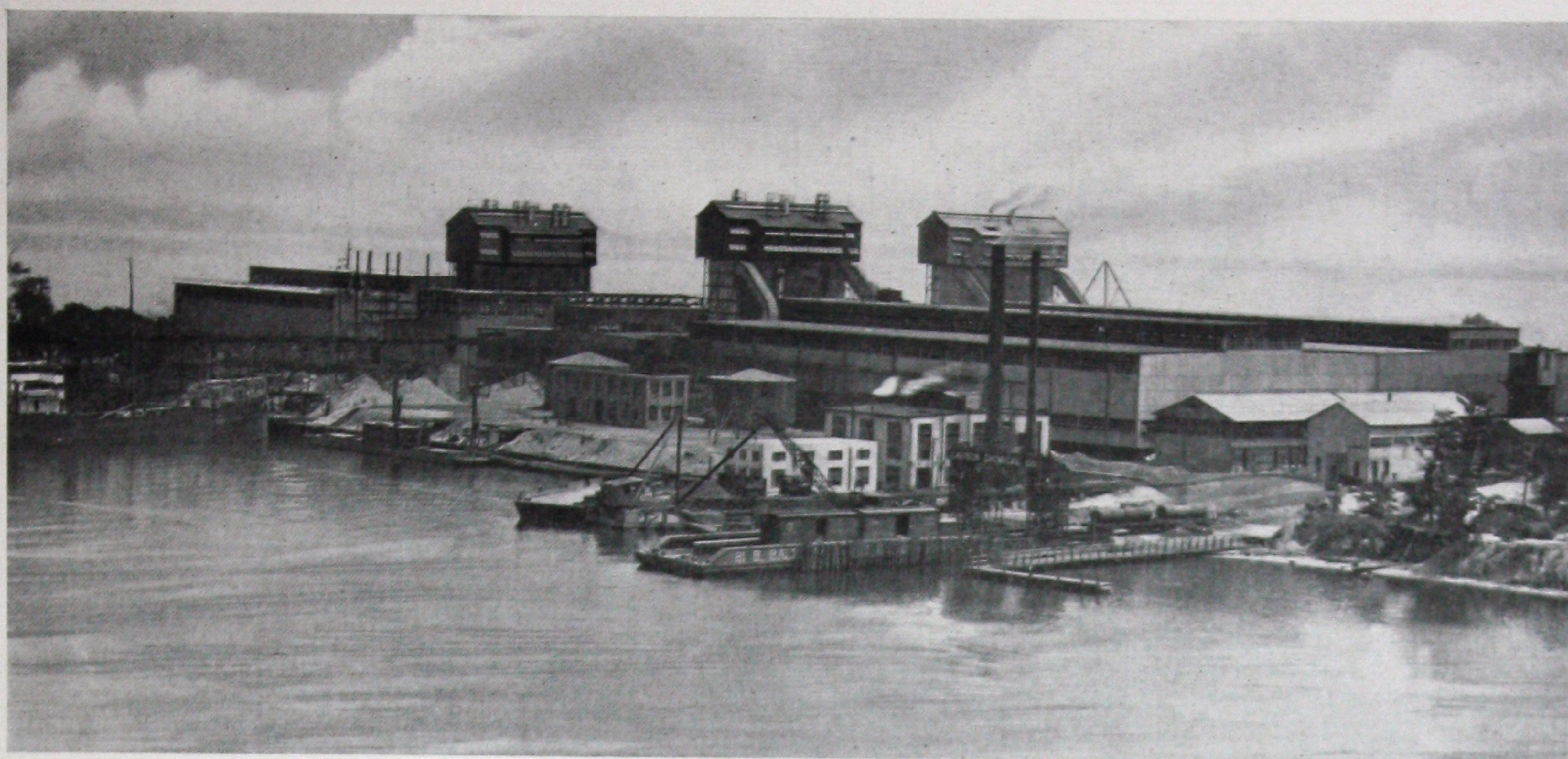


MINNESOTA STATE HISTORICAL SOCIETY BUILDING, ST. PAUL, MINN.
Clarence H. Johnston, State Architect
6800 square feet of Robertson Skylight



WASHINGTON, D. C., NAVY YARD—MACHINE SHOP.
Industrial Engineering Company, N. Y. City, Contractors.
Robertson Skylight Construction (12,200 sq. ft.) and eighteen Robertson Ventilators made of Robertson Process Metal, in use over interior court.





DAVISON CHEMICAL COMPANY, BALTIMORE, MD. Ernest Miller, Engineer

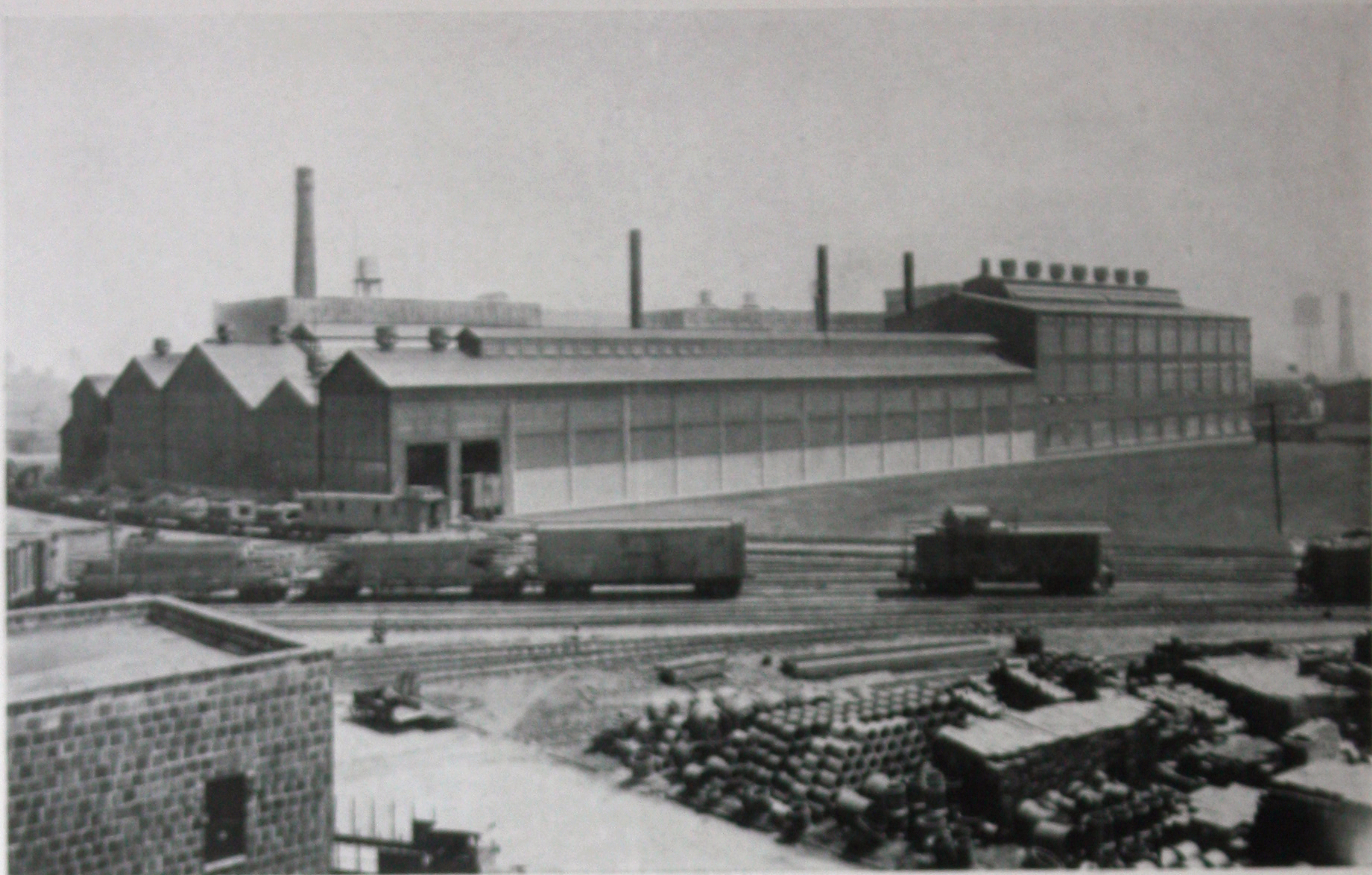
Robertson Skylights are used extensively throughout this plant. The sixth repeat order received recently is indicative of the success with which they meet the severe acid fume and salt atmosphere conditions prevailing here. Over half a million square feet of Robertson Process Metal has been used in the roofing and siding of these buildings, in which sulphuric, nitric and hydrofluoric acids are produced.



PUBLIC SERVICE ELECTRIC COMPANY, NEWARK, N. J.
N. A. Carle, Chief Engineer, C. H. Baker, Mechanical Engineer

Essex Power Station, near Newark, N. J. Robertson Skylights used extensively and exclusively on this modern power plant, which cost over \$2,000,000. An addition to the plant has been built, and Robertson Skylights were installed on it. The Public Service Corporation is a large and regular user of Robertson products. The original installation of Robertson Glazing Construction has resulted in numerous repeat orders.





SIZER FORGE COMPANY, BUFFALO, N. Y.
A. H. Van Cleve, Engineer

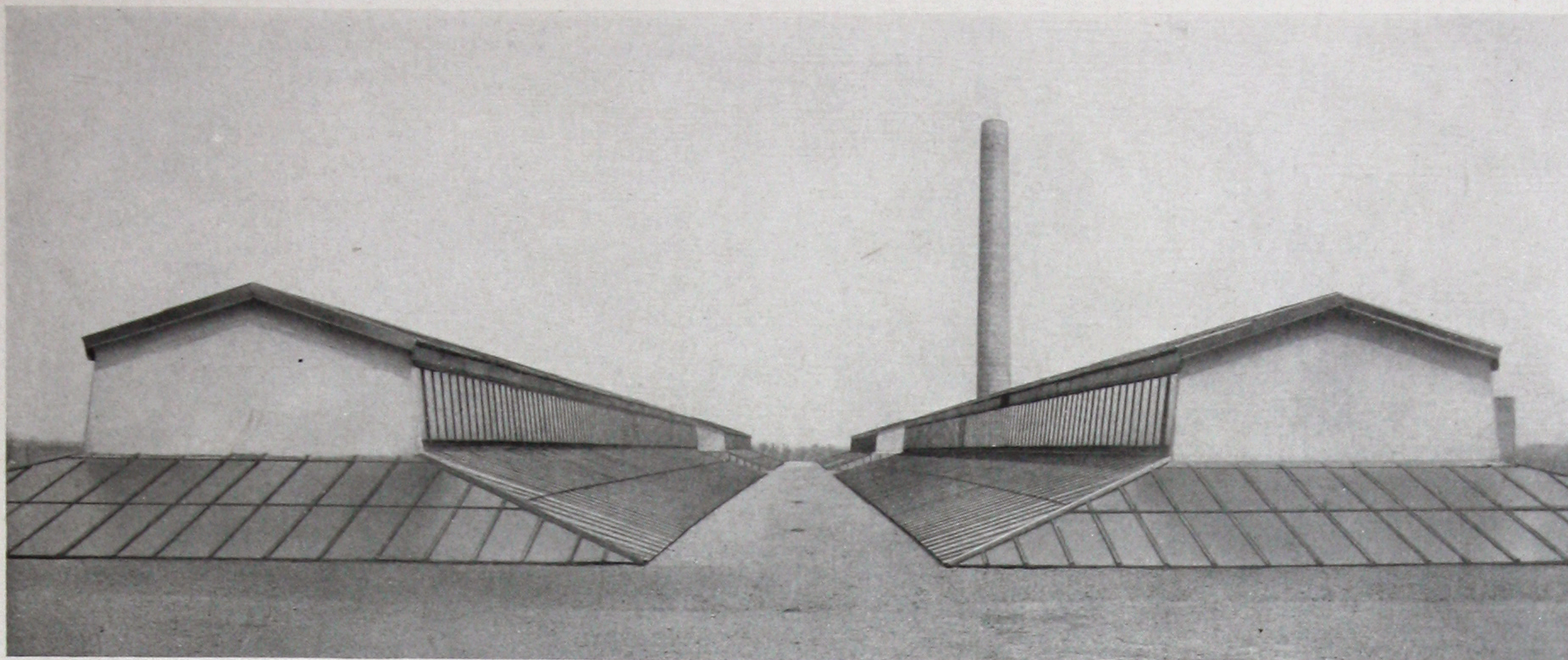
These buildings are entirely protected from corrosion. The roofing, siding, ventilators and louvres, as well as the monitor sash are made of Robertson Process Metal.



SAMSON MOTOR COMPANY, PITTSBURGH, PA.
R. Maurice Trimble, Architect, Golden & Crick, Contractors, Pittsburgh, Pa.

This is an excellent example of automobile sales and service building. Besides Robertson Skylights, it has a Robertson Process Gypsum Roof and Robertson Process Metal Ventilators.





SAXON MOTOR CAR CORPORATION, DETROIT, MICH.
H. H. Lane, Constructing Engineer, Detroit.

An interesting installation of Robertson Skylight Construction. About 39,000 sq. ft. on and around the four monitors.





MALTOSIA GARDENS, BUFFALO, N. Y.
Emerson C. Dell, Architect

The entire roofing area is of Robertson Glazing Construction (about 6000 square feet), and the gutters and caps are of RPM. This installation made in 1916.

Standard Sizes of Robertson Skylights

To facilitate shipment of skylights in many cases, the H. H. Robertson Co. has fixed upon the following standard sizes, any of which can be shipped in considerably less time than others, for which the different dimensions would necessitate the making up of special shop drawings and orders. The dimensions given are the horizontal widths out-to-out of curbs. The skylights may be of any length.

For hip and double-pitch skylights (for $\frac{1}{4}$ pitch only) 4, 5, 6, 7, 8, 10

and 12 feet. For single-pitch skylights without intermediate purlins, 4, 5, 6 and 7 feet, and with one intermediate purlin, equally spaced, 8, 9, 10, 11 and 12 feet. The single-pitch skylights may be of any rise not less than 3 inches in 12.

Any of the H. H. Robertson Co's. standard size skylights can be erected by any good mechanic, and may be ordered without glass, but width of glass to be used must be stated.



FIRESTONE TIRE &
RUBBER COMPANY,
AKRON, OHIO.

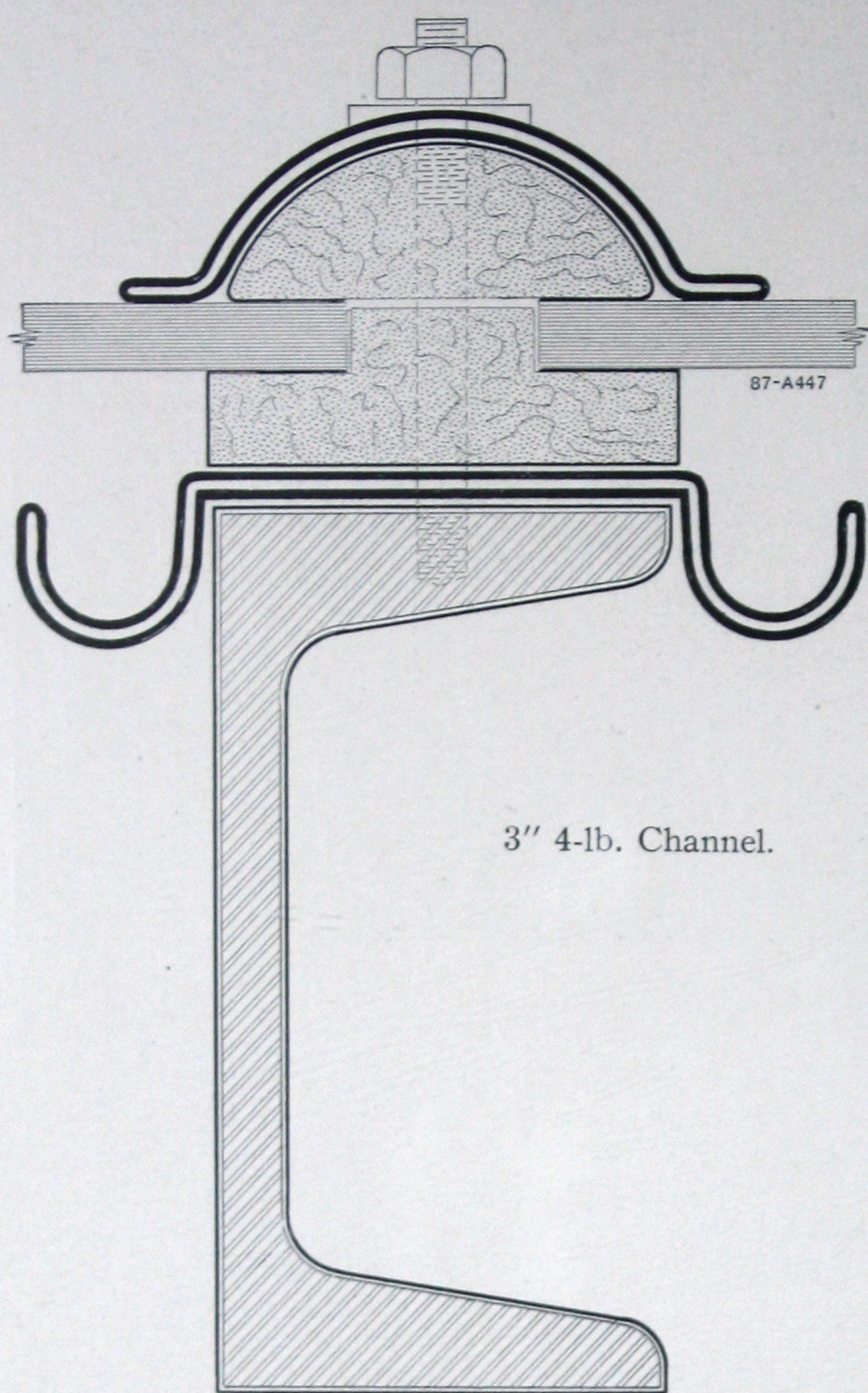
A small section of the Robertson
Monitor Sash Construction and
Asbestosteel Roofing used in
this plant.



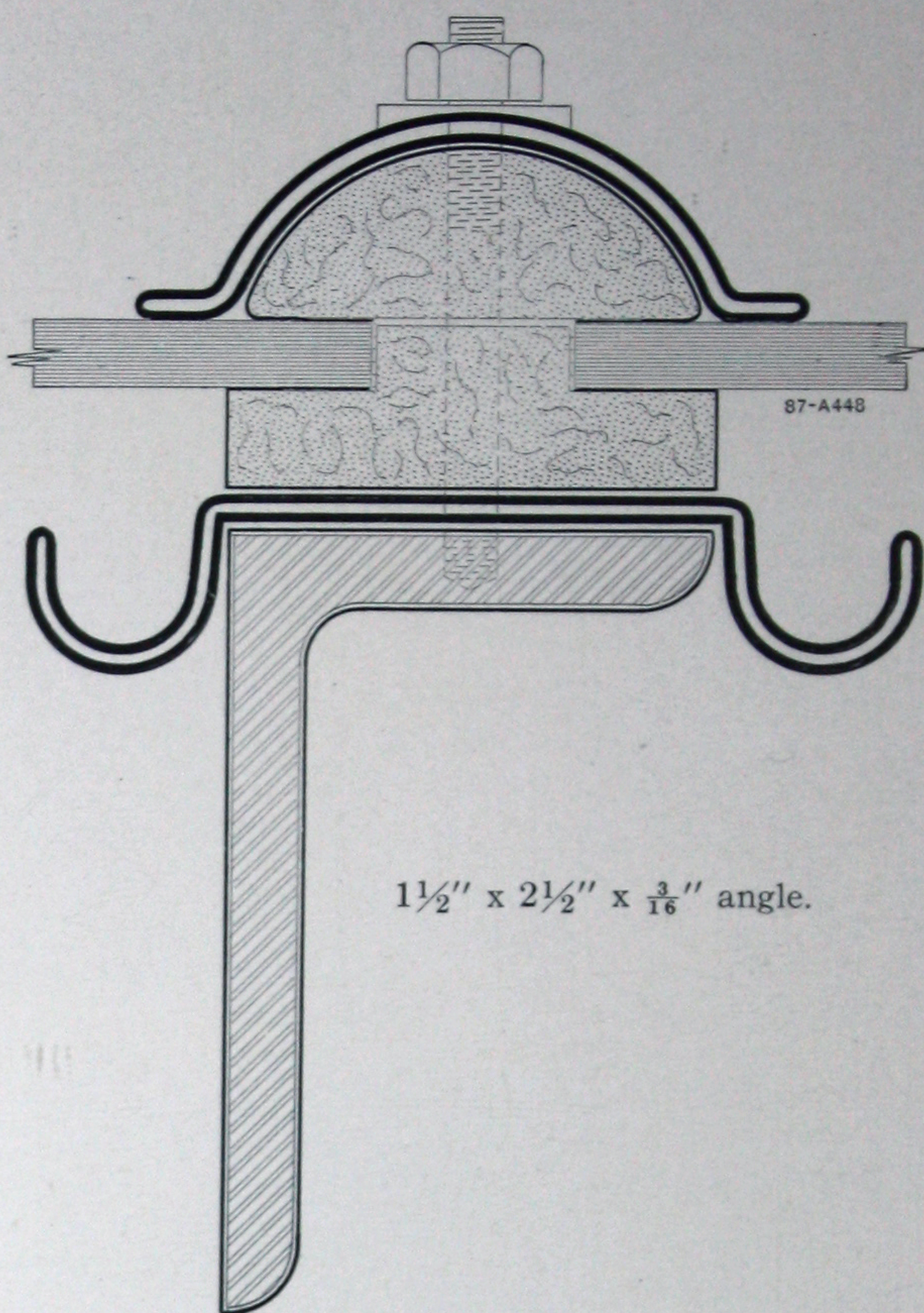
A section of a large expanse of sawtooth construction
utilizing Robertson Sawtooth Sash. There are over
30,000 feet of Robertson construction here.



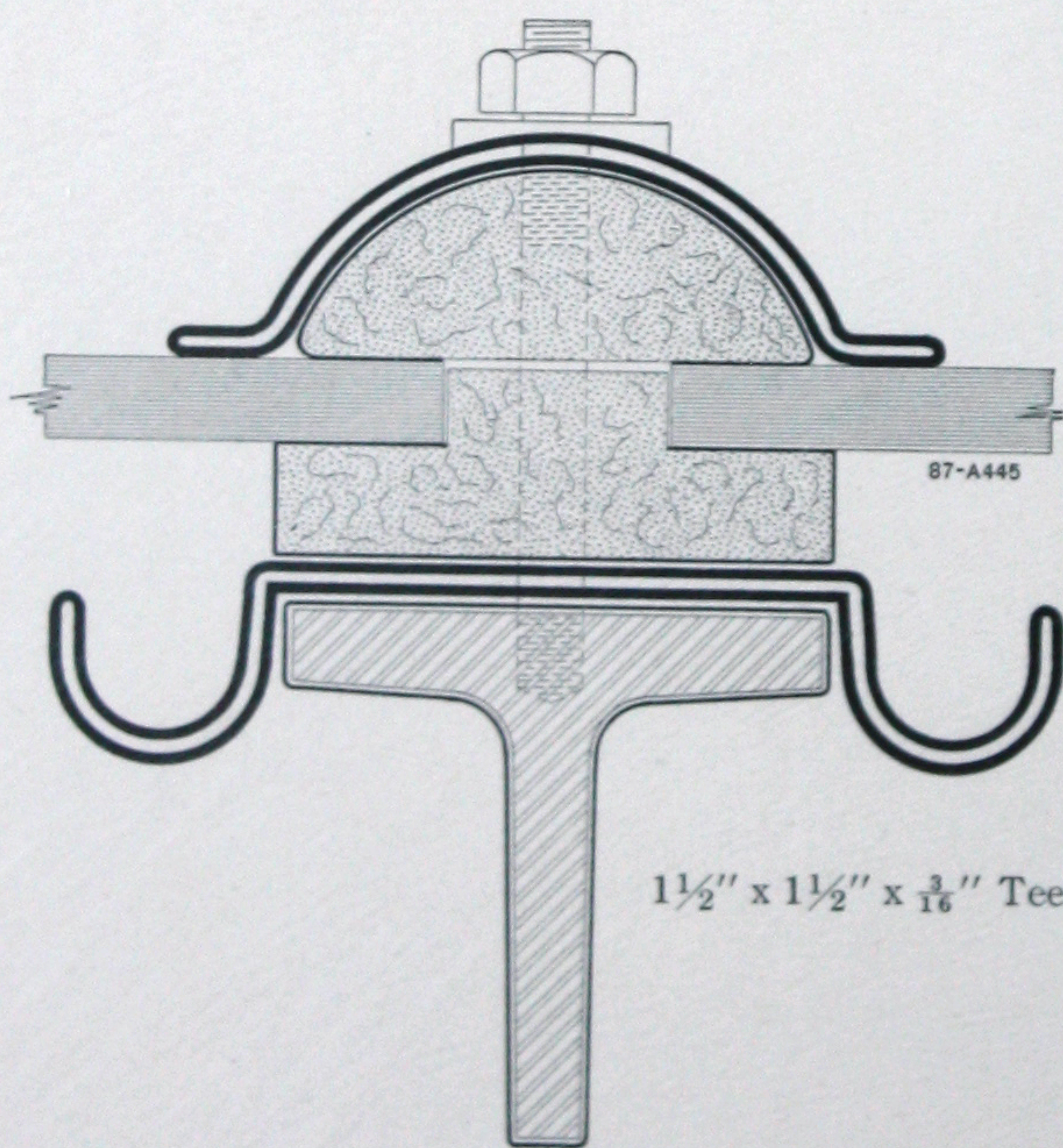
Standard Robertson Skylight Bars



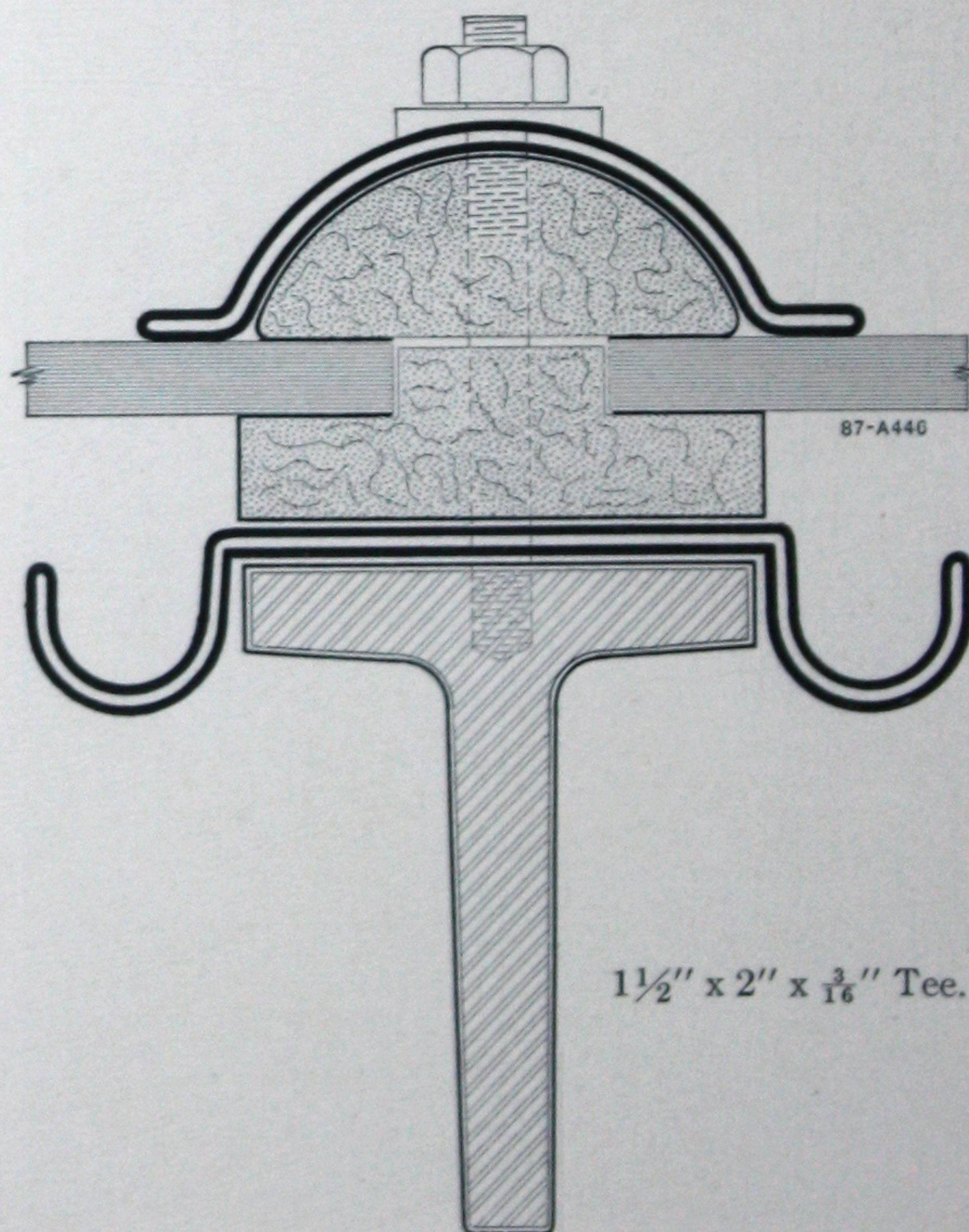
3" 4-lb. Channel.



1 1/2" x 2 1/2" x 3/16" angle.



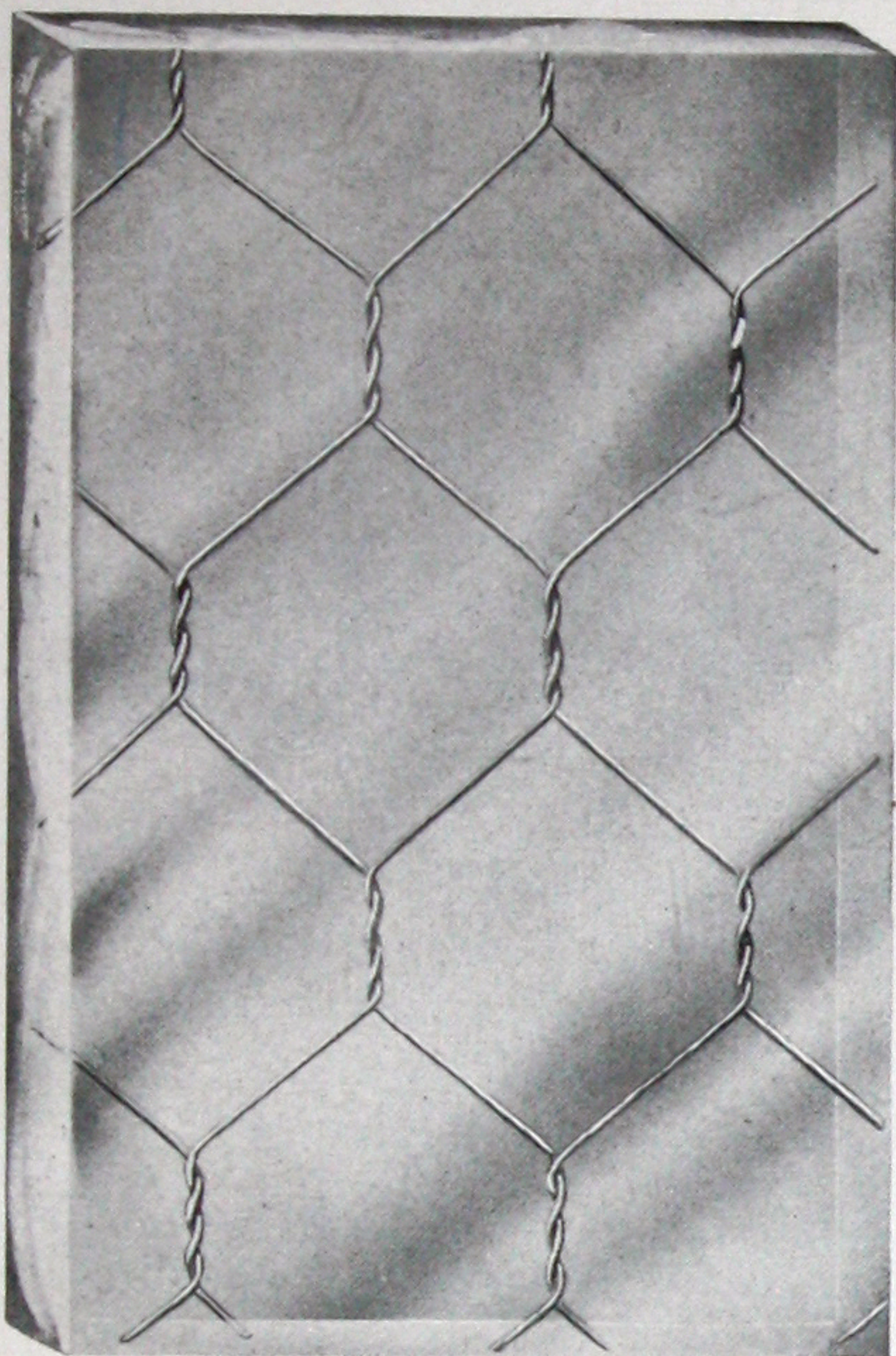
1 1/2" x 1 1/2" x 3/16" Tee.



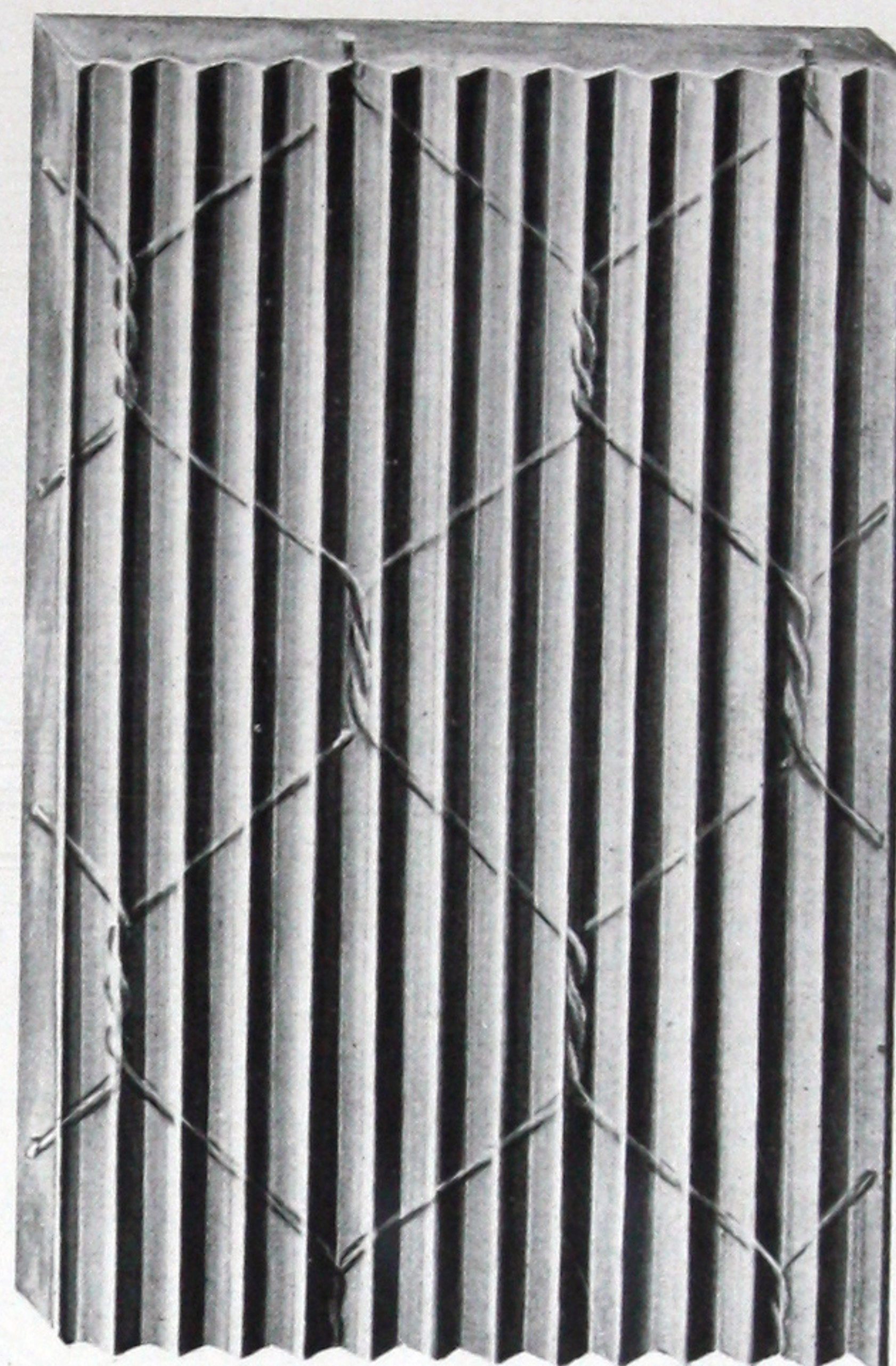
1 1/2" x 2" x 3/16" Tee.



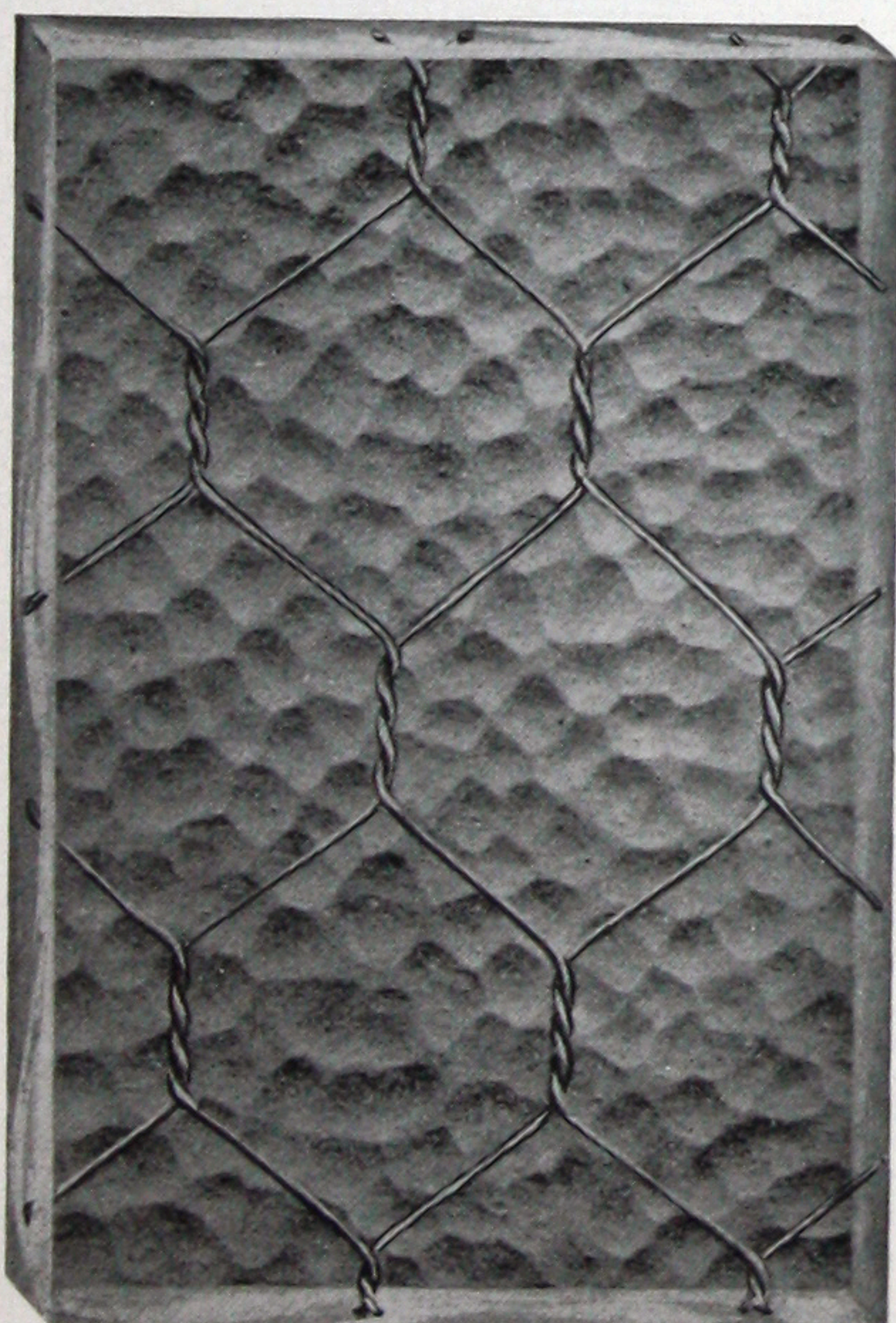
Types of Glass Generally Used in Robertson Glazing Construction



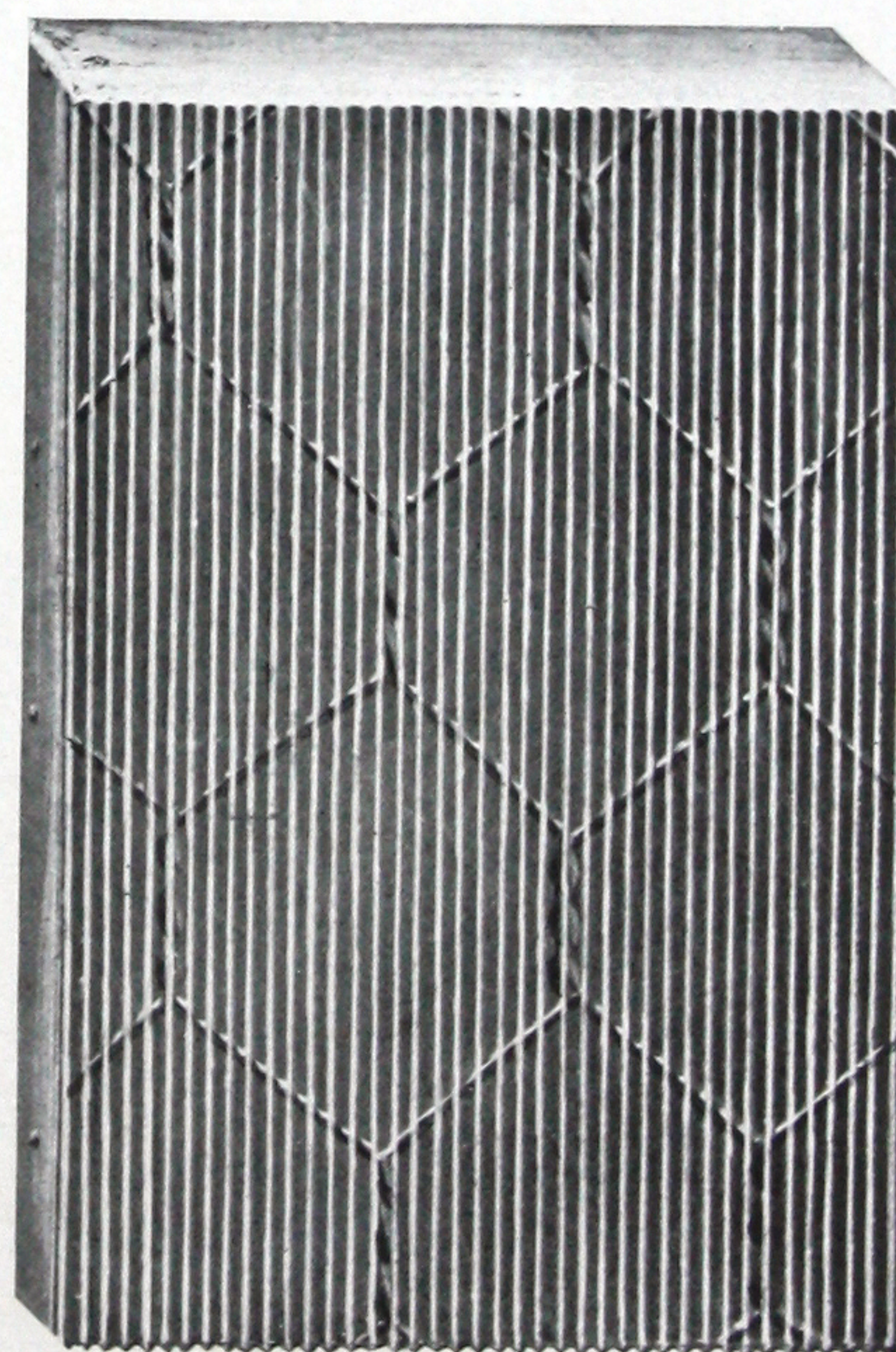
Polished Wire Glass.



Pentecor Wire Glass.



Rough Wire Glass.



Ribbed Wire Glass.

Note. Glass of the same kinds but without wire insertion are occasionally employed.



Suggested Specifications for Skylights

All skylights shall be of the Robertson puttyless type, as manufactured by the H. H. Robertson Co., of Pittsburgh, Pa., and in accordance with detailed drawings submitted by it and approved by the architects, engineers or purchasers.

The glass-supporting steel bars shall have a maximum deflection of not greater than $1/30"$ per lineal foot of span under normal loading. The steel bars shall first be thoroughly cleansed of all scale, grease and rust, and shall then be hermetically sealed by Robertson Process materials, which shall be fully capable of resisting attacks by fumes, gases, etc. (or—shall be given one shop coat of paint.)

The glass shall be (state thickness, make and kind) and no light shall be wider than .. " nor longer than ", nor shall any one light be supported by another. The glass shall be left free to expand without coming into contact with bolts or other rigid substances. It shall have a broad and continuous bearing on firm non-absorbing and non-metallic cushioning material, which shall be sufficiently resilient to adjust itself to any irregularities of the glass surface along its bearing line. Similarly flexible material shall be placed **continuously** between the glass plates, and shall fill all spaces between the upper surfaces of the glass and the caps.

All caps, condensation gutters, aprons and other sheet metal parts shall be made of Robertson Process Metal (or copper or galvanized steel). The caps and sheet metal parts shall be thoroughly secured in place by sherardized (or brass) bolts, nuts and washers. All anchorage clips shall be of painted steel (or brass) and shall be secured to the skylight bars with sherardized (or brass) bolts.

Ample provision shall be made for carrying away all condensation which may be delivered from the under surfaces of the glass.

All curb and roof flashings shall be furnished and placed by the contractor for the roofing work. They shall be well connected and left ready to receive the skylight work.

Where ventilators are required to be mounted on the skylights they shall be Robertson Ventilators, furnished and erected by the contractor for the skylight work and shall be made of Robertson Process Metal (or copper or galvanized steel).

The skylight work shall be leakage (and corrosion) proof and all glass shall be left clean and without cracks.

A Shorter Skylight Specification

All skylights shall be of standard Robertson puttyless type, as made by the H. H. Robertson Co., of Pittsburgh, Pa. The steel bars shall be hermetically sealed by approved rust-proofing materials (or painted with). The glass shall be (state make, kind and thickness).

All sheet metal parts shall be of Robertson Process Metal (or copper, or galvanized steel). All bolts shall be sherardized (or, except that bolts for caps and other sheet metal parts shall be of brass) and all

anchorage clips or other exposed metal, except as above specified, shall be of brass (or painted or galvanized steel).

All curb and roof flashings shall be furnished and placed by the contractor for roofing and shall be well connected and left ready for the skylight work.

All skylight work shall be leakage (and corrosion) proof and all glass shall be left clean and without cracks.

Estimates

Proposals for Robertson skylights and other products, standard detail drawings, literature, the suggestions of the Company's Engineering Department, or any other information pertaining to its specialties may be freely obtained by addressing the Company or any of its agencies.

When estimates are desired on skylights the following data is essential:

- Number of skylights.
- Style (single or double pitch, hipped, etc.).
- Dimensions of areas to be glazed.
- Pitch of glass (or rise per lineal foot).
- Kind and size of curbs.
- Kind and size of purlins (if any).

Distance between curbs and purlins.

Distance between purlins.

Kind and thickness of glass desired.

If caps, gutters, etc., are to be of other than Robertson Process Metal, state kind and weight or gauge.

State whether steel bars are to be protected by Robertson Process or Plain Painted.

Kind of roofing to be used.

Most of the above mentioned data usually can be obtained from the roof plans, elevations, vertical cross section and detail drawings. If available, we should be pleased to have them forwarded at our expense. They will be returned promptly if desired.



Maximum Bar Spans

Snow and Wind Loads + Dead Load (Deflection not exceeding $\frac{1}{80}$ " per foot)

18" Glass

BAR	WT.	M. I.	Combined Live and Dead Loads								Monitor Sash 30
			20 + 7	22 + 7	25 + 7	27 + 7	30 + 7	35 + 7	40 + 7	45 + 7	
T 1½" x 1½" x ⅜"	1.94	.11	4'-10"	4'- 8"	4'- 7"	4'- 6"	4'- 5"	4'- 2"	4'- 0"	3'-11"	4'- 8"
T 1½" x 1½" x ¼"	2.47	.15	5'- 4"	5'- 2"	5'- 1"	4'-11"	4'-10"	4'- 7"	4'- 5"	4'- 4"	5'- 2"
T 1½" x 2" x ⅜"	2.45	.27	6'- 6"	6'- 4"	6'- 2"	6'- 0"	5'-10"	5'- 7"	5'- 5"	5'- 3"	6'- 3"
L 1½" x 2½" x ⅜"	2.44	.46	7'- 9"	7'- 7"	7'- 4"	7'- 2"	7'- 0"	6'- 8"	6'- 5"	6'- 3"	7'- 6"
L 1½" x 2½" x ¼"	3.19	.59	8'- 5"	8'- 3"	8'- 0"	7'-10"	7'- 7"	7'- 3"	7'- 0"	6'- 9"	8'- 2"
Special	...	1.0	10'- 1"	9'-10"	9'- 7"	9'- 4"	9'- 1"	8'- 9"	8'- 5"	8'- 1"	9'- 8"
C 3"-4#	4.0	1.6	11'- 9"	11'- 6"	11'- 2"	10'-11"	10'- 7"	10'- 2"	9'- 9"	9'- 5"	11'- 4"
C 4"-5¼#	5.25	3.8	15'- 9"	15'- 4"	14'-10"	14'- 7"	14'- 2"	13'- 7"	13'- 1"	12'- 7"	15'- 2"

20" Glass

T 1½" x 1½" x ⅜"	1.94	.11	4'- 8"	4'- 6"	4'- 5"	4'- 4"	4'- 2"	4'- 0"	3'-10"	3'- 9"	4'- 6"
T 1½" x 1½" x ¼"	2.47	.15	5'- 2"	5'- 1"	4'-11"	4'- 9"	4'- 8"	4'- 6"	4'- 4"	4'- 2"	5'- 0"
T 1½" x 2" x ⅜"	2.45	.27	6'- 3"	6'- 2"	6'- 0"	5'-10"	5'- 8"	5'- 5"	5'- 3"	5'- 1"	6'- 1"
L 1½" x 2½" x ⅜"	2.44	.46	7'- 6"	7'- 4"	7'- 1"	6'-11"	6'- 9"	6'- 6"	6'- 3"	6'- 1"	7'- 3"
L 1½" x 2½" x ¼"	3.19	.59	8'- 2"	8'- 0"	7'-10"	7'- 7"	7'- 4"	7'- 2"	6'- 9"	6'- 7"	7'-10"
Special	...	1.0	9'- 9"	9'- 6"	9'- 2"	9'- 0"	8'- 9"	8'- 5"	8'- 1"	7'-10"	9'- 5"
C 3"-4#	4.0	1.6	11'- 4"	11'- 1"	10'-10"	10'- 8"	10'- 3"	9'-10"	9'- 5"	9'- 2"	11'- 0"
C 4"-5¼#	5.25	3.8	15'- 2"	14'-10"	14'- 4"	14'- 1"	13'- 8"	13'- 1"	12'- 8"	12'- 2"	14'- 8"

22" Glass

T 1½" x 1½" x ⅜"	1.94	.11	4'- 6"	4'- 5"	4'- 3"	4'- 2"	4'- 1"	3'-11"	3'- 9"	3'- 8"	4'- 4"
T 1½" x 1½" x ¼"	2.47	.15	5'- 0"	4'-11"	4'- 9"	4'- 8"	4'- 6"	4'- 4"	4'- 2"	4'- 0"	4'-10"
T 1½" x 2" x ⅜"	2.45	.27	6'- 1"	5'-11"	5'- 9"	5'- 8"	5'- 6"	5'- 3"	5'- 1"	4'-11"	5'-11"
L 1½" x 2½" x ⅜"	2.44	.46	7'- 3"	7'- 1"	6'-11"	6'- 9"	6'- 7"	6'- 3"	6'- 1"	5'-10"	7'- 0"
L 1½" x 2½" x ¼"	3.19	.59	7'-11"	7'- 9"	7'- 6"	7'- 4"	7'- 1"	6'-10"	6'- 7"	6'- 2"	7'- 8"
Special	...	1.0	9'- 5"	9'- 3"	8'-11"	8'- 9"	8'- 6"	8'- 2"	7'-10"	7'- 7"	9'- 1"
C 3"-4#	4.0	1.6	11'- 0"	10'- 9"	10'- 5"	10'- 3"	9'-11"	9'- 6"	9'- 2"	8'-10"	10'- 8"
C 4"-5¼#	5.25	3.8	14'- 9"	14'- 5"	14'- 0"	13'- 8"	13'- 3"	12'- 8"	12'- 3"	11'-10"	14'- 2"

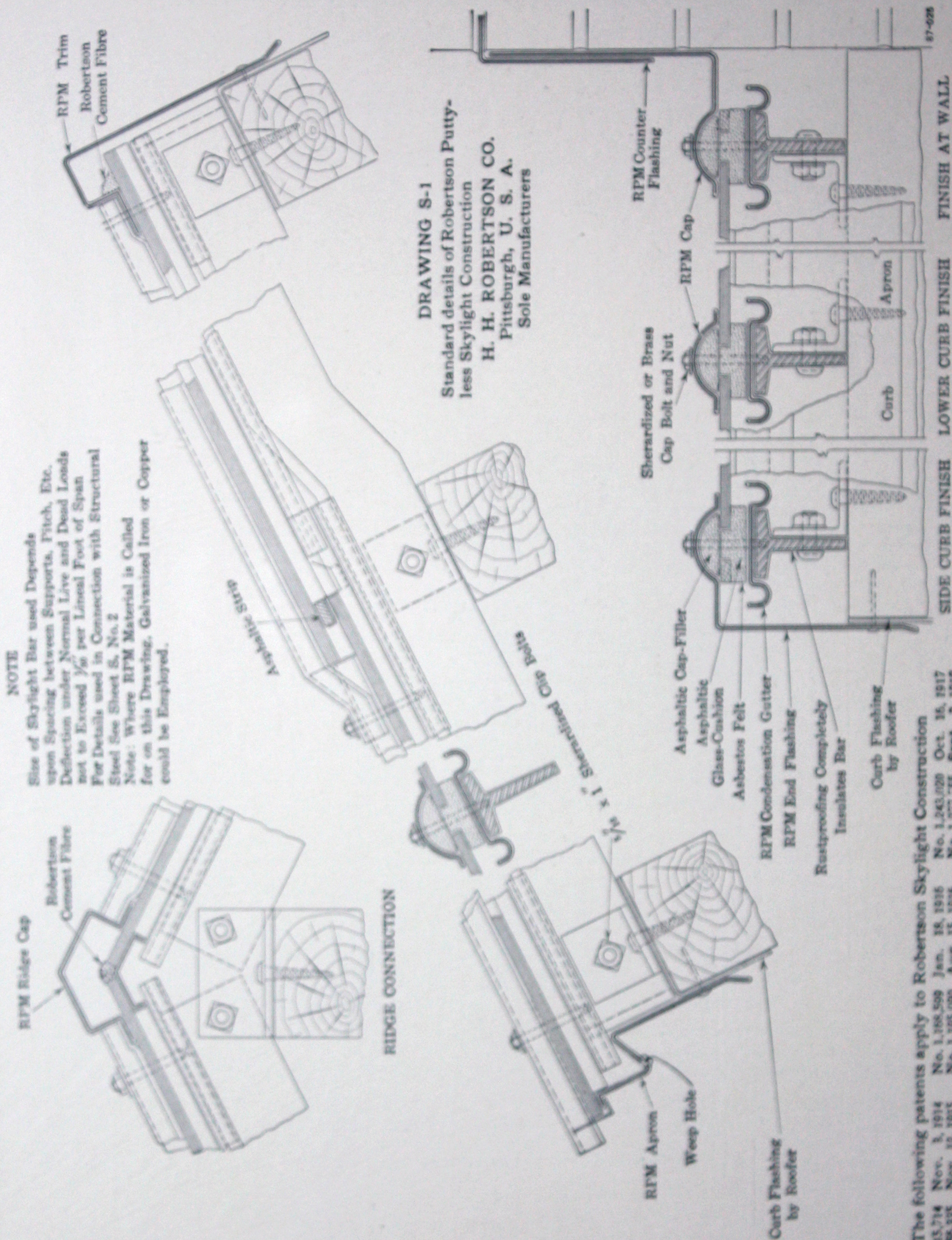
24" Glass

T 1½" x 1½" x ⅜"	1.94	.11	4'- 5"	4'- 3"	4'- 2"	4'- 1"	4'- 0"	3'-10"	3'- 8"	3'- 6"	4'- 3"
T 1½" x 1½" x ¼"	2.47	.15	4'-10"	4'- 9"	4'- 7"	4'- 6"	4'- 5"	4'- 3"	4'- 1"	3'-11"	4'- 8"
T 1½" x 2" x ⅜"	2.45	.27	5'-11"	5'-10"	5'- 7"	5'- 6"	5'- 4"	5'- 2"	4'-11"	4'- 9"	5'- 9"
L 1½" x 2½" x ⅜"	2.44	.46	7'- 1"	6'-11"	6'- 8"	6'- 7"	6'- 4"	6'- 1"	5'-11"	5'- 8"	6'-10"
L 1½" x 2½" x ¼"	3.19	.59	7'- 8"	7'- 6"	7'- 3"	7'- 1"	6'-11"	6'- 8"	6'- 5"	6'- 2"	7'- 5"
Special	...	1.0	9'- 2"	9'- 0"	8'- 8"	8'- 6"	8'- 3"	7'-11"	7'- 7"	7'- 5"	8'-10"
C 3"-4#	4.0	1.6	10'- 9"	10'- 6"	10'- 2"	9'-11"	9'- 8"	9'- 3"	8'-11"	8'- 8"	10'- 4"
C 4"-5¼#	5.25	3.8	14'- 4"	14'- 0"	13'- 6"	13'- 3"	12'-11"	12'- 4"	11'-11"	11'- 6"	13'-10"

Snow and Wind Loads Combined in Pounds Per Square of Roof Surface

	⅓ Pitch	½ Pitch	¾ Pitch	1 Pitch	1½ Pitch	Over 1½
	18°-25'	21°-48'	26°-33'	33°-41'	45°-0'	60° to 90°
Central States	30	22	25	25	30	30
New England States	40	35	25	25	30	30
Northern States	45	37	30	25	30	30
Rocky Mountain States	35	27	25	25	30	30
Southern Pacific States	20	22	25	25	30	30





The following patents apply to Robertson Skylight Construction

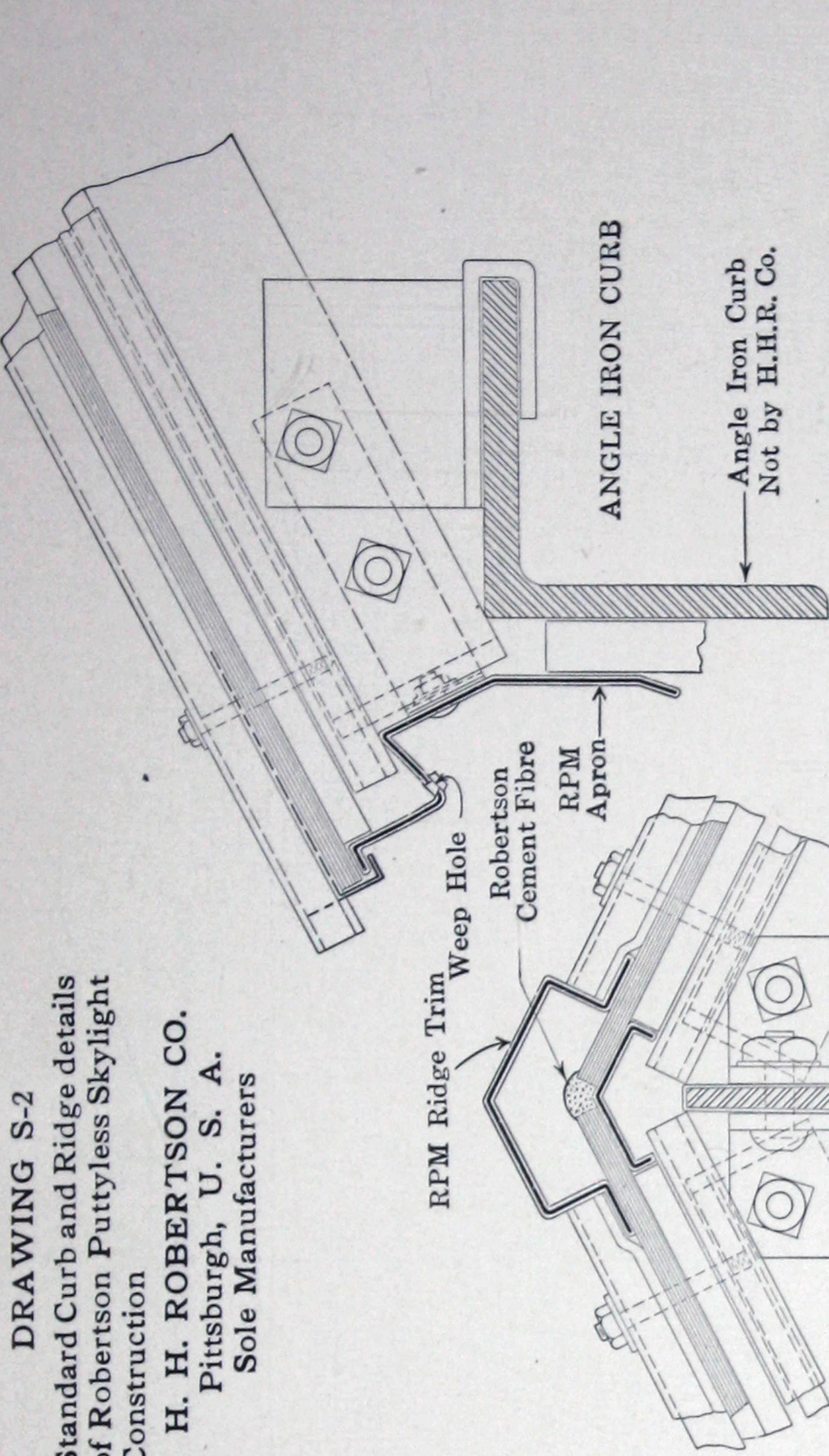
Patent No.	Date	Patent No.	Date	Patent No.	Date
No. 1,115,714	Nov. 3, 1914	No. 1,168,599	Jan. 18, 1916	No. 1,243,020	Oct. 15, 1917
No. 1,156,335	Nov. 12, 1915	No. 1,195,090	Aug. 15, 1916	No. 1,277,555	Sept. 3, 1918
No. 1,167,949	Jan. 11, 1916	No. 1,227,861	May 29, 1917	No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending.

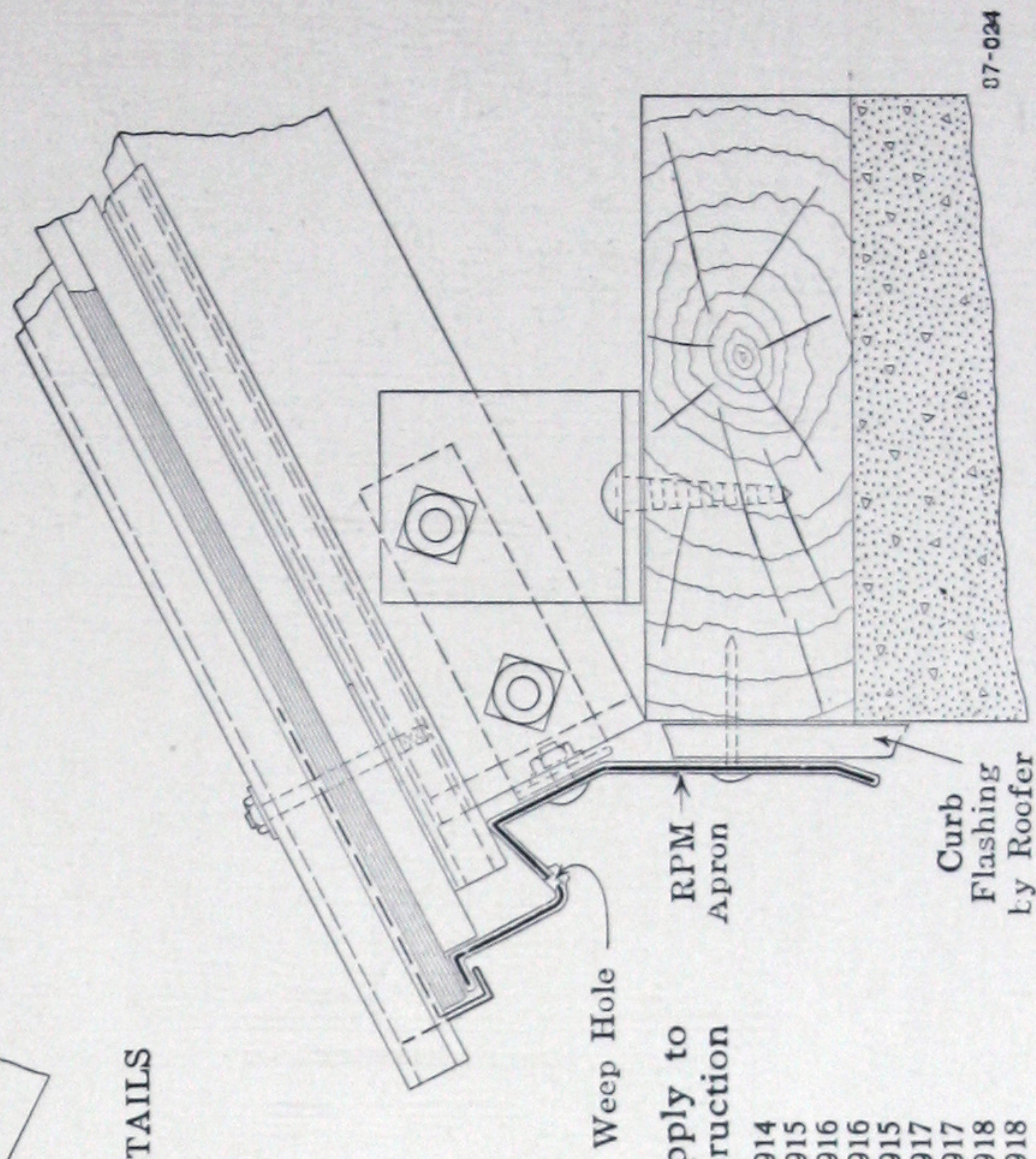
DRAWING S-2

Standard Curb and Ridge details
of Robertson Puttyless Skylight
Construction

H. H. ROBERTSON CO.
Pittsburgh, U. S. A.
Sole Manufacturers

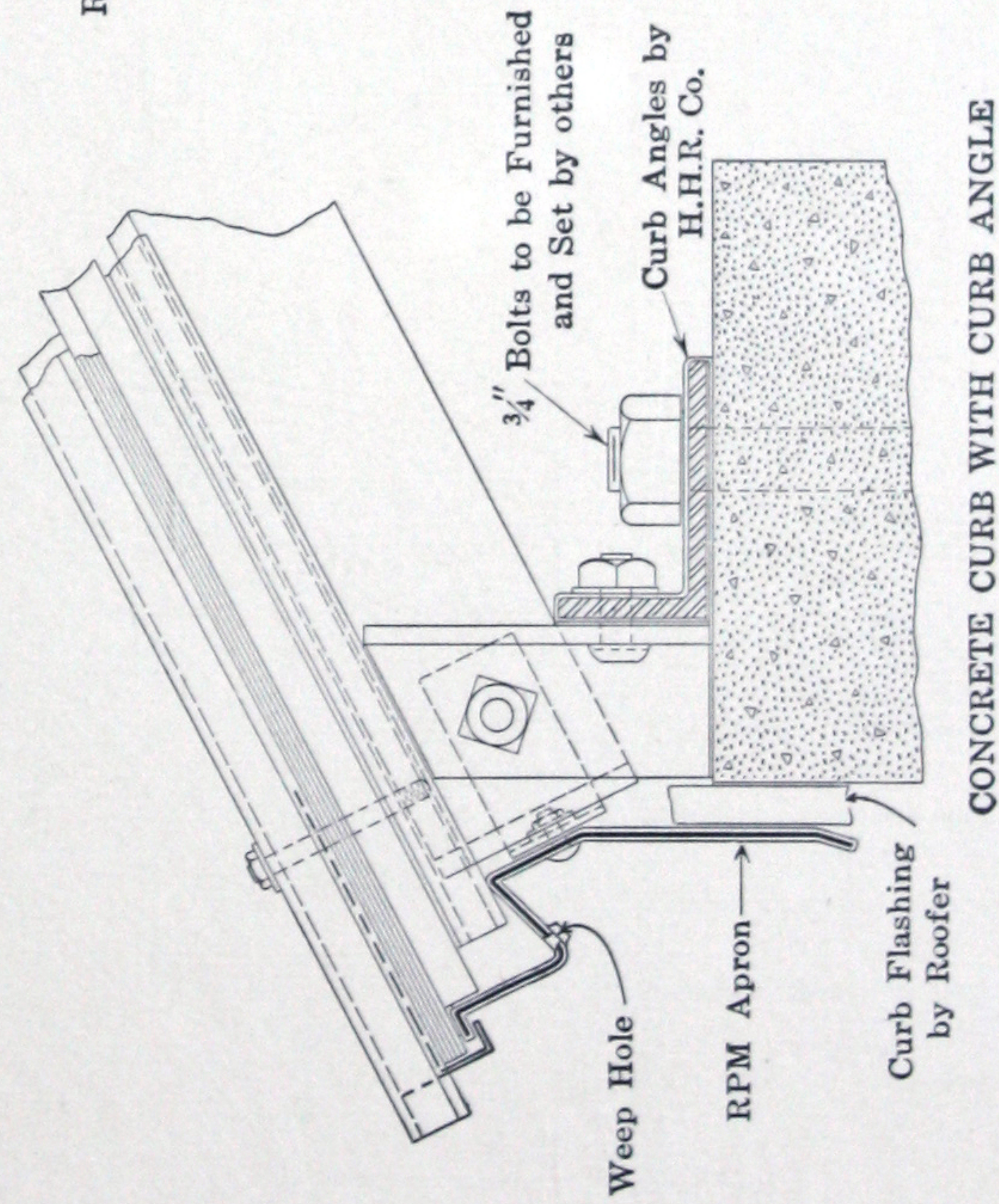
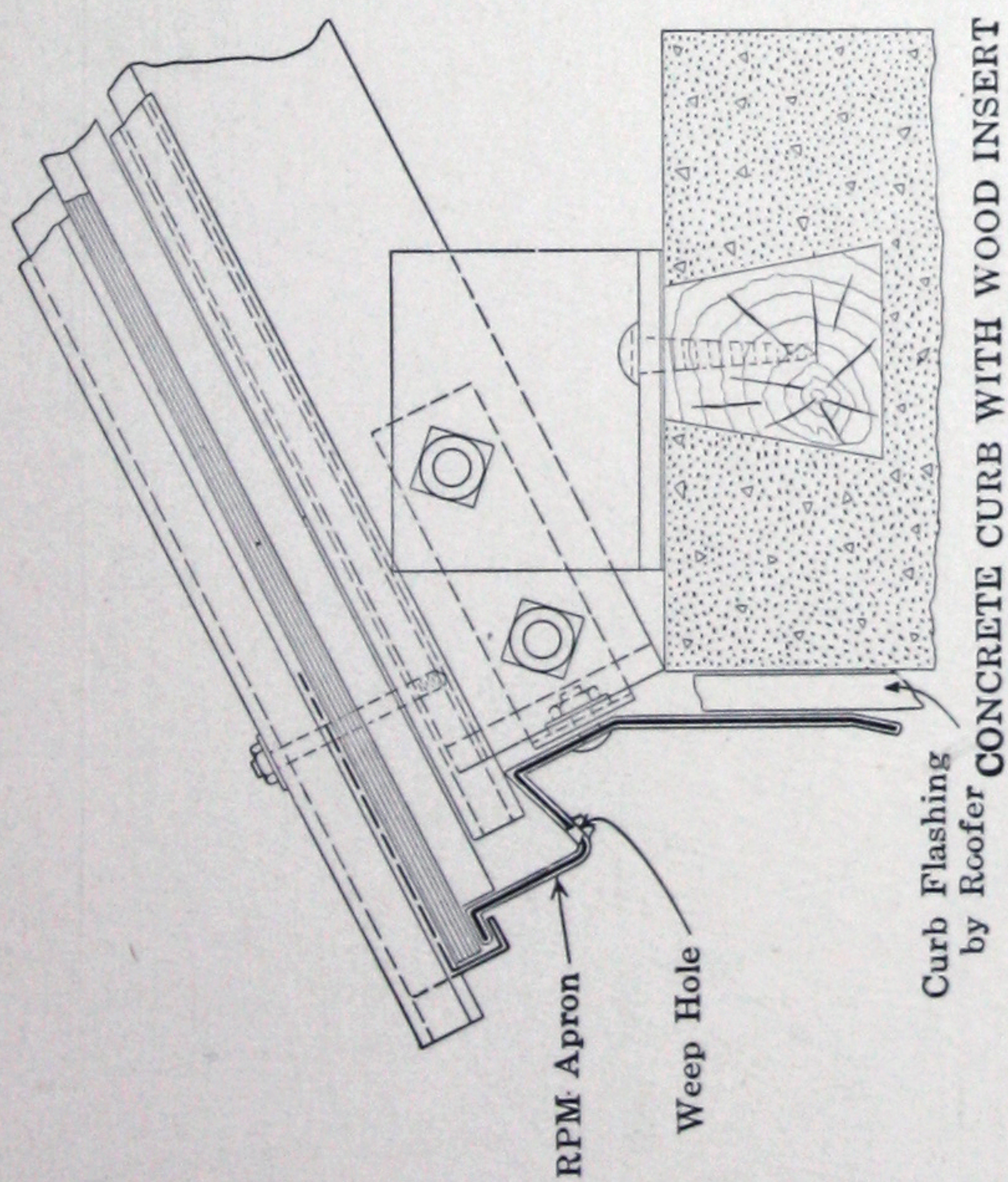


RIDGE AND COMMON BAR DETAILS
ON HIP SKYLIGHT

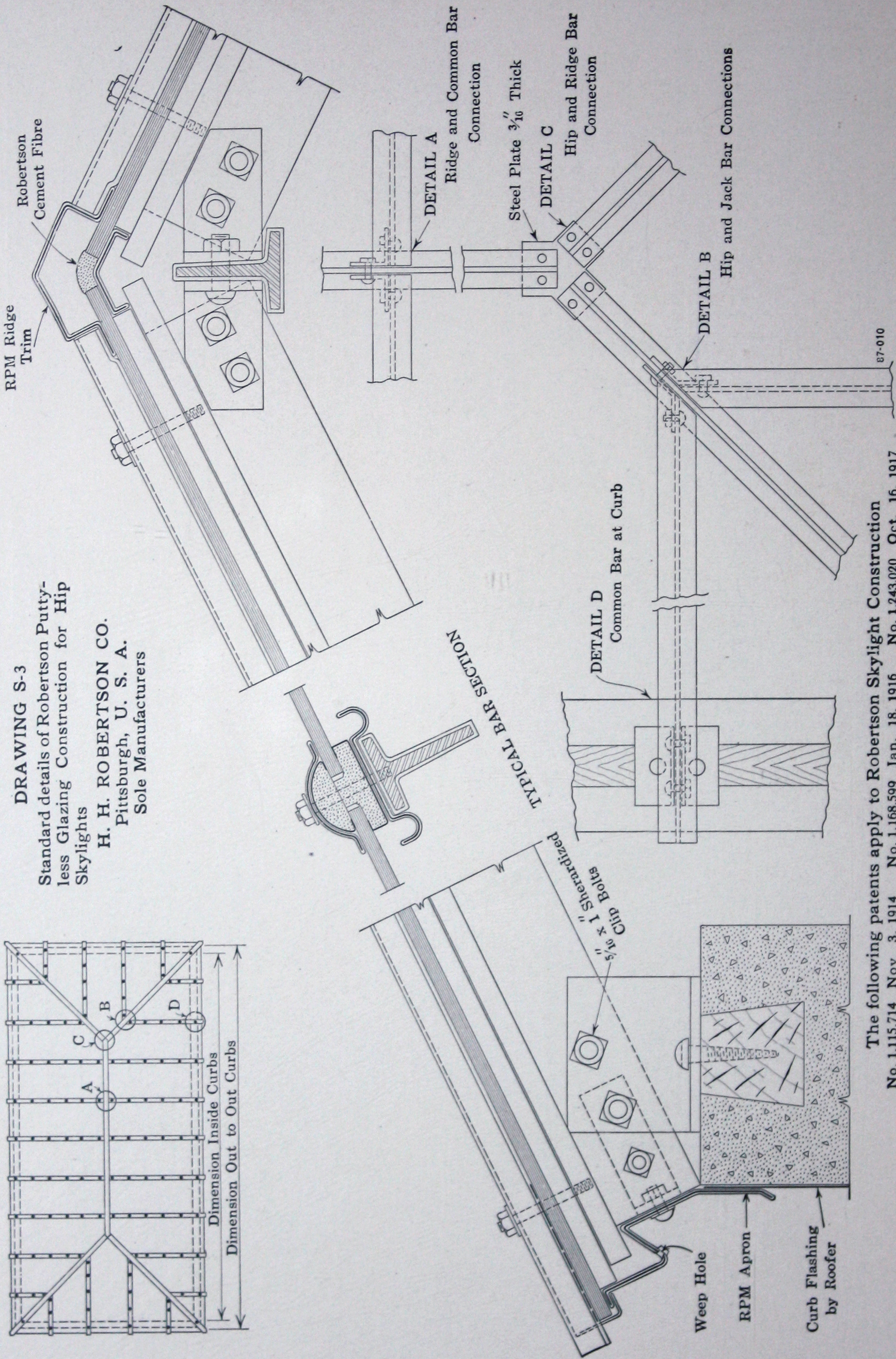


The following patents apply to
Robertson Skylight Construction

- | | |
|---------------|---------------|
| No. 1,115,714 | Nov. 3, 1914 |
| No. 1,156,335 | Nov. 12, 1915 |
| No. 1,167,949 | Jan. 11, 1916 |
| No. 1,168,599 | Jan. 18, 1916 |
| No. 1,195,090 | Aug. 15, 1915 |
| No. 1,227,861 | May 29, 1917 |
| No. 1,243,020 | Oct. 16, 1917 |
| No. 1,277,755 | Sept. 3, 1918 |
| No. 1,280,913 | Oct. 8, 1918 |
- Licensed under patents
Nos. 775,635 and 775,636.
Other patents pending.



DRAWING S-3
Standard details of Robertson Putty-
less Glazing Construction for Hip
Skylights
H. H. ROBERTSON CO.
Pittsburgh, U. S. A.
Sole Manufacturers



The following patents apply to Robertson Skylight Construction

No. 1,115,714	Nov. 3, 1914	No. 1,168,599	Jan. 18, 1916	No. 1,243,020	Oct. 16, 1917
No. 1,156,335	Nov. 12, 1915	No. 1,195,090	Aug. 15, 1916	No. 1,277,755	Sept. 3, 1918
No. 1,167,949	Jan. 11, 1916	No. 1,227,861	May 29, 1917	No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending.

DRAWING S-4

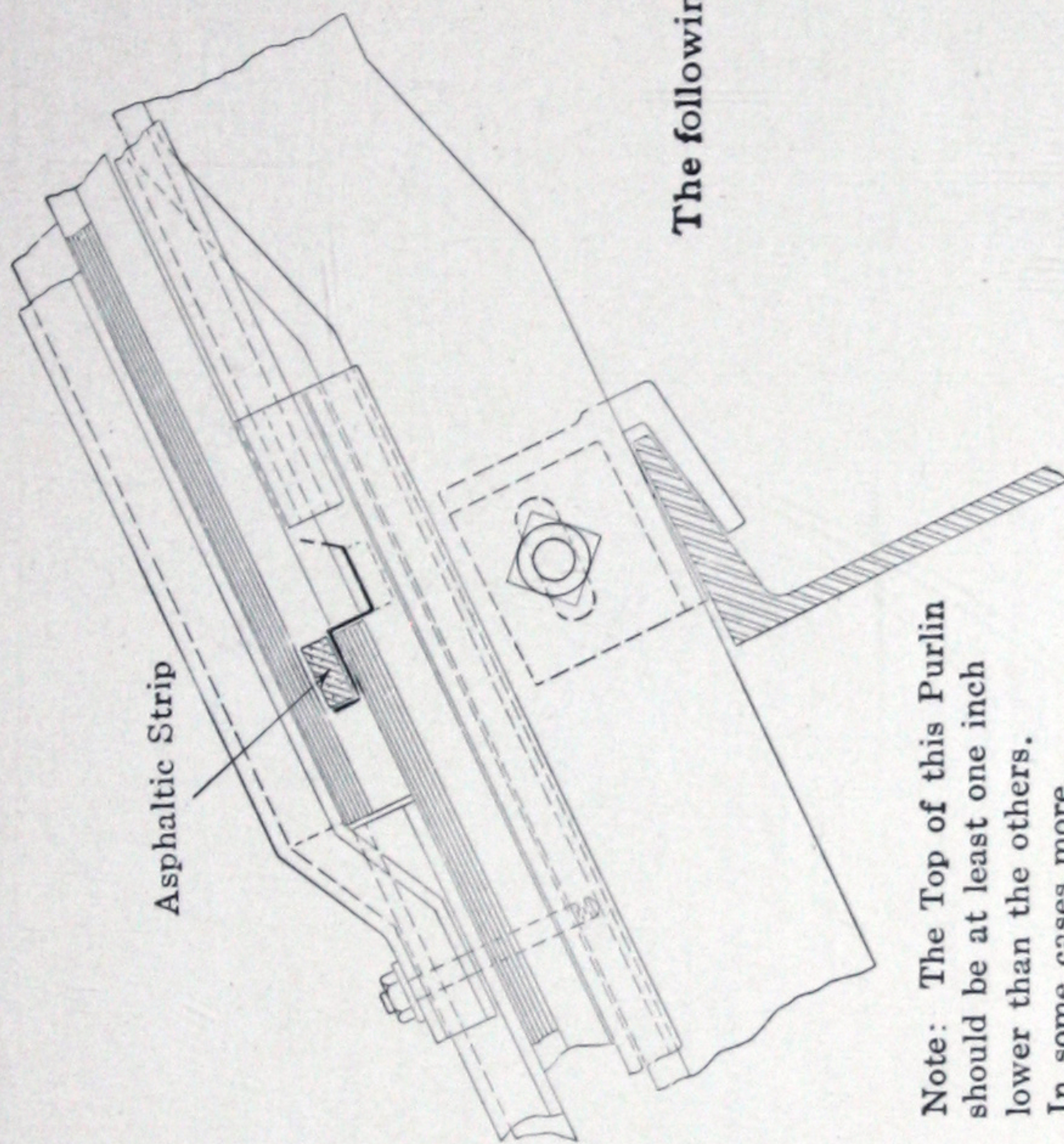
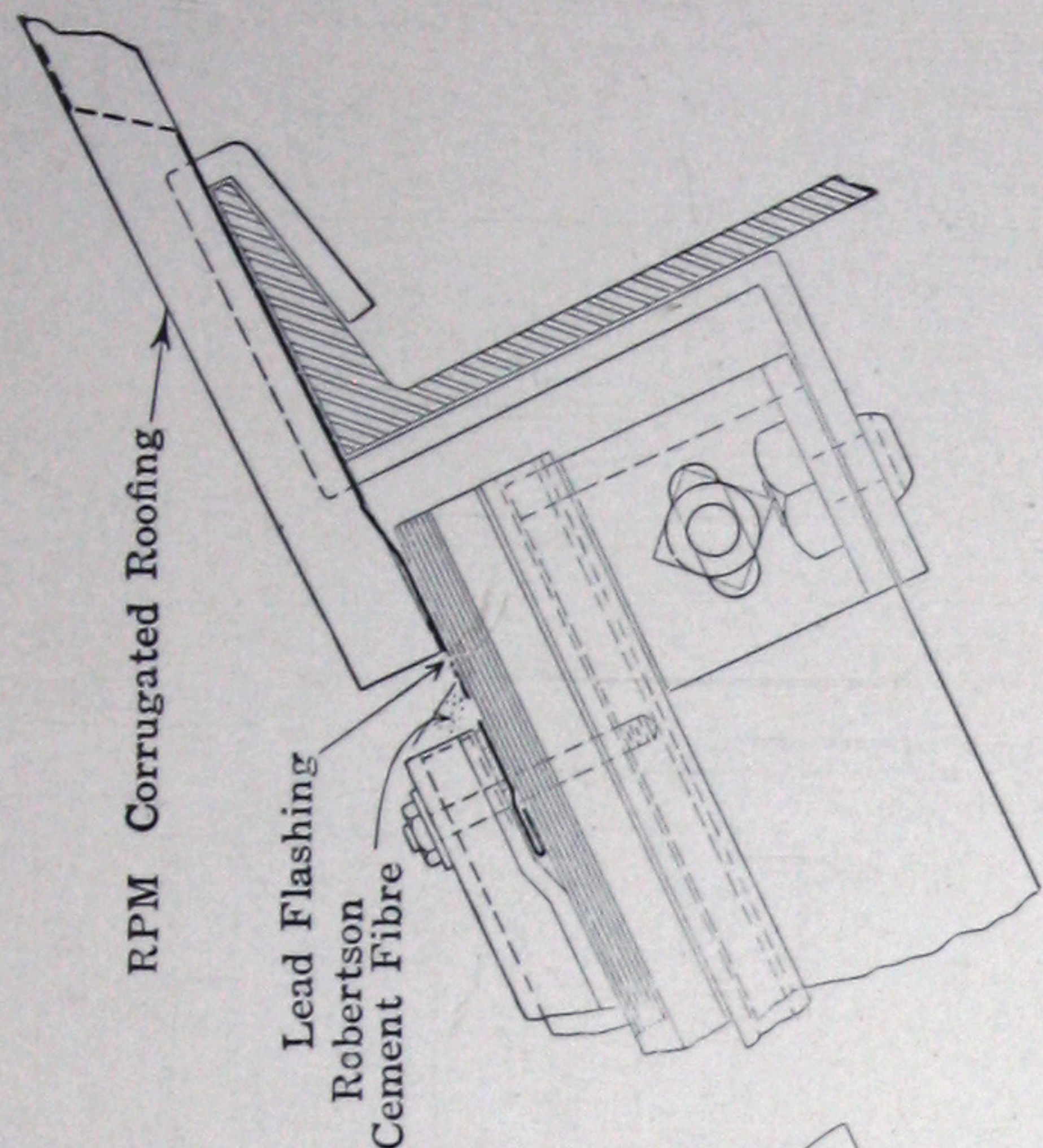
Standard details of Robertson Puttyless Skylight Construction as used in connection with Robertson Process Metal Roofs.

H. H. ROBERTSON CO.
Pittsburgh, U. S. A.
Sole Manufacturers

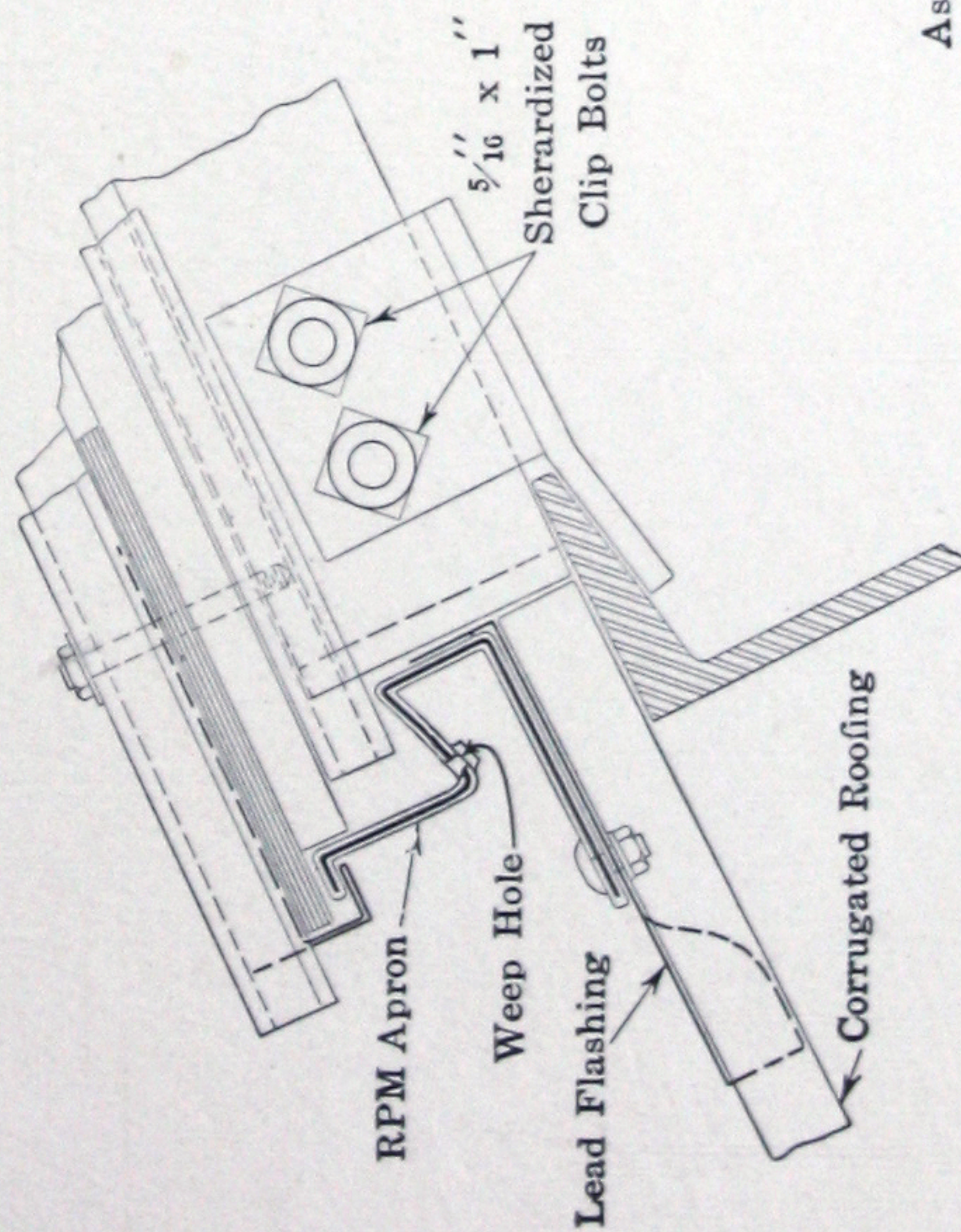
Note:
Size of Skylight Bar used depends upon spacing between Supports, Pitch, etc.—w—

Deflection Under Normal Live and Dead Loads not to Exceed $1/30$ of an Inch per Lineal Foot of Span

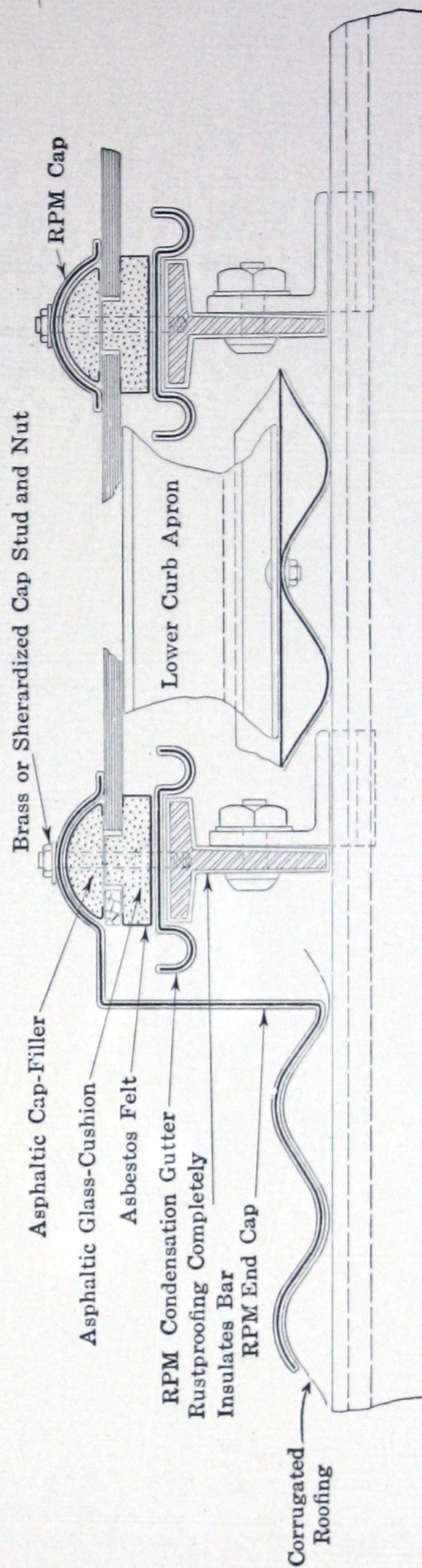
Note:
Where RPM Material is called for on this Drawing Galvanized Iron or Copper could be Employed



Note: The Top of this Purlin should be at least one inch lower than the others. In some cases more.



LOWER CURB FINISH



SIDE FINISH AT BOTTOM

LOWER CURB FINISH

87-08

The following patents apply to Robertson Skylight Construction

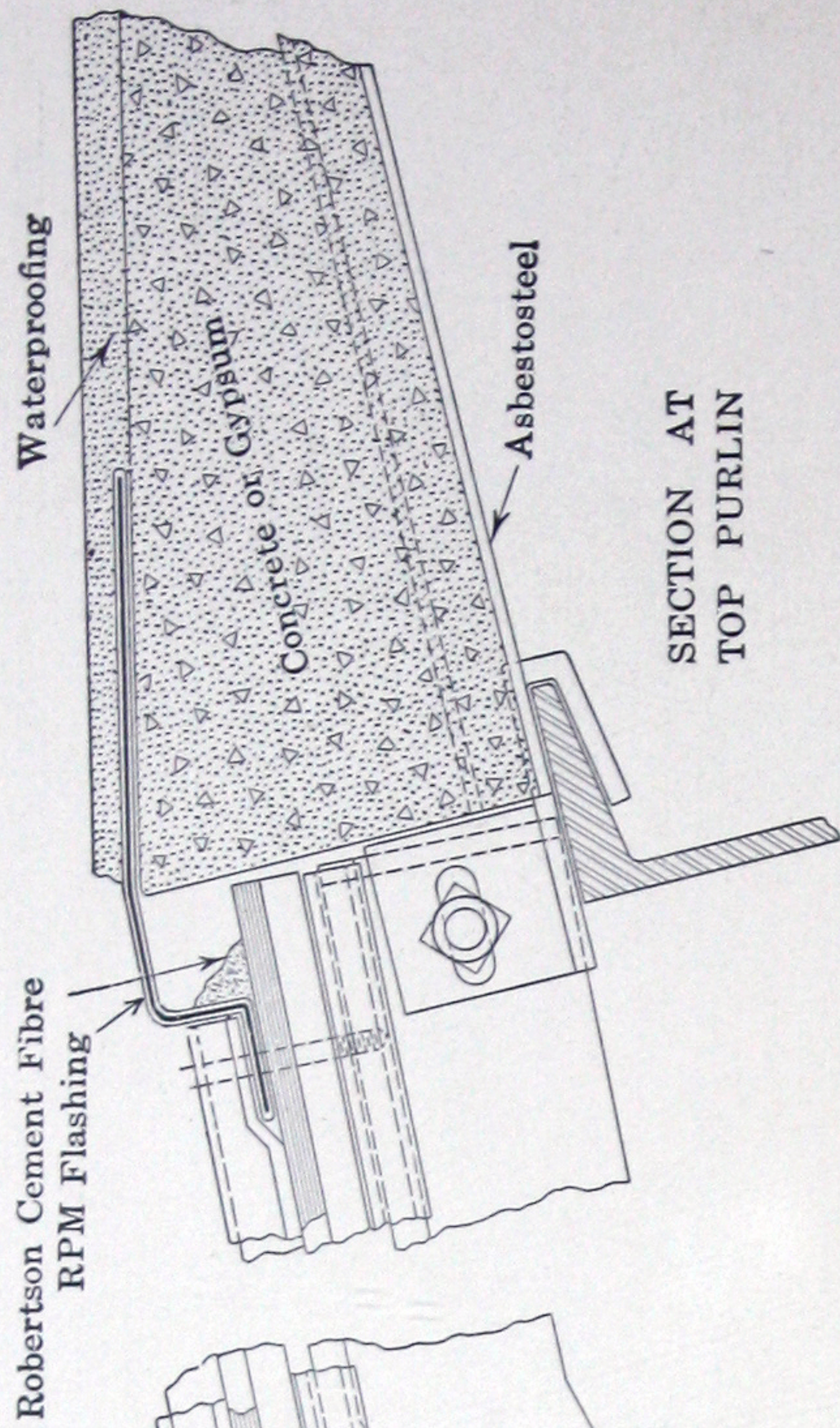
No. 1,115,714	Nov. 3, 1914
No. 1,156,335	Nov. 12, 1915
No. 1,167,949	Jan. 11, 1916
No. 1,168,599	Jan. 18, 1916
No. 1,195,090	Aug. 15, 1916
No. 1,227,861	May 29, 1917
No. 1,243,020	Oct. 16, 1917
No. 1,277,755	Sept. 3, 1918
No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636.
Other patents pending.

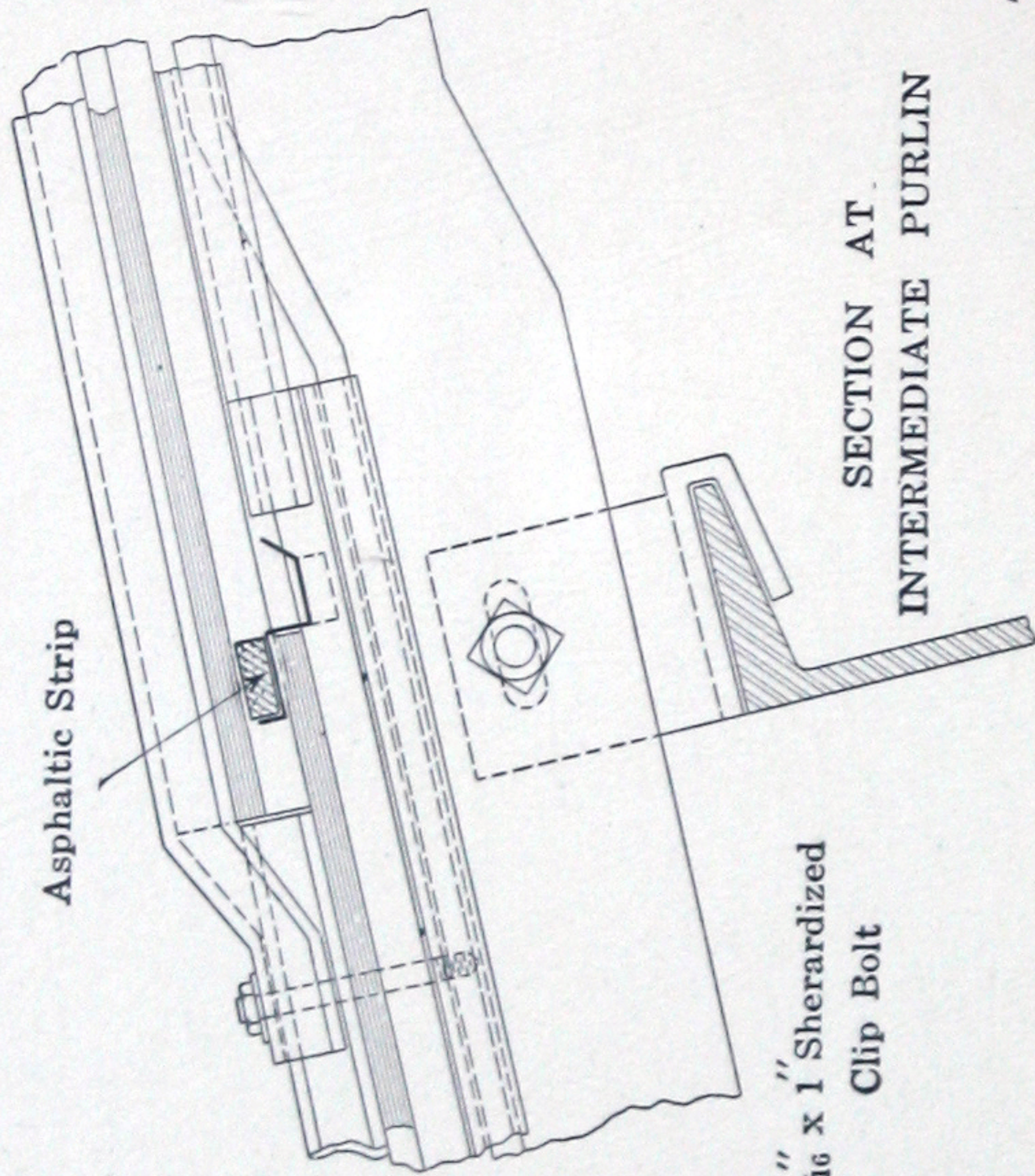
DRAWING S-5

Standard details of Robertson Puttyless Skylight as applied with Slab Roofing Construction

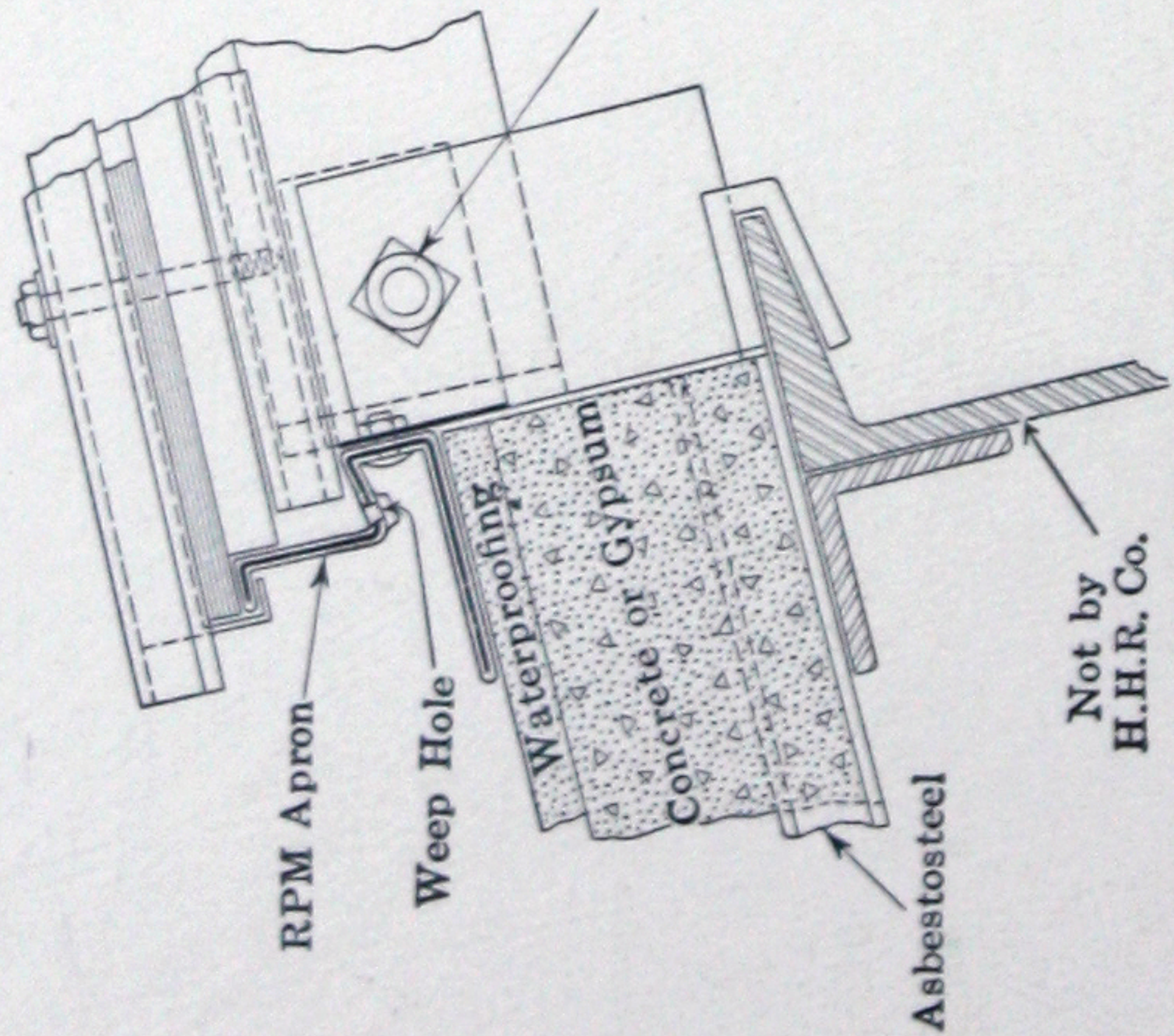
H. H. ROBERTSON CO.
Pittsburgh, U. S. A.
Sole Manufacturers



SECTION AT
TOP PURLIN



SECTION AT
INTERMEDIATE PURLIN



SECTION AT
LOWER PURLIN

NOTE

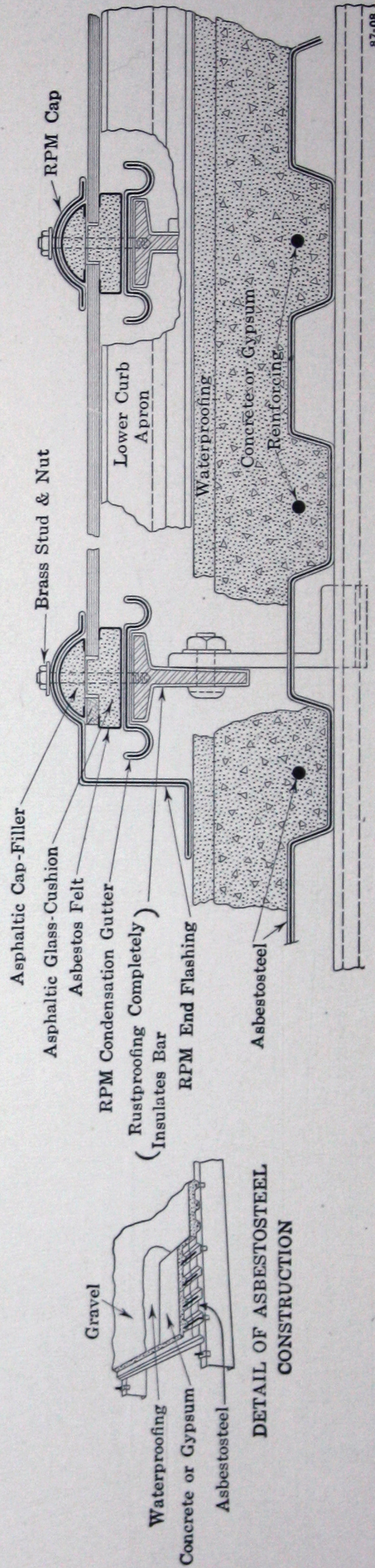
Size of skylight bar used depends upon spacing between supports pitch, etc. —
Deflection under normal live and dead loads not to exceed $\frac{1}{30}$ of an inch per lineal foot. —
w

The following patents apply to Robertson Skylight Construction

No. 1,115,714	Nov. 3, 1914	No. 1,195,090	Aug. 15, 1916
No. 1,156,335	Nov. 12, 1915	No. 1,227,861	May 29, 1917
No. 1,167,949	Jan. 11, 1916	No. 1,243,020	Oct. 16, 1917
No. 1,168,599	Jan. 18, 1916	No. 1,277,755	Sept. 3, 1918
		No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636.

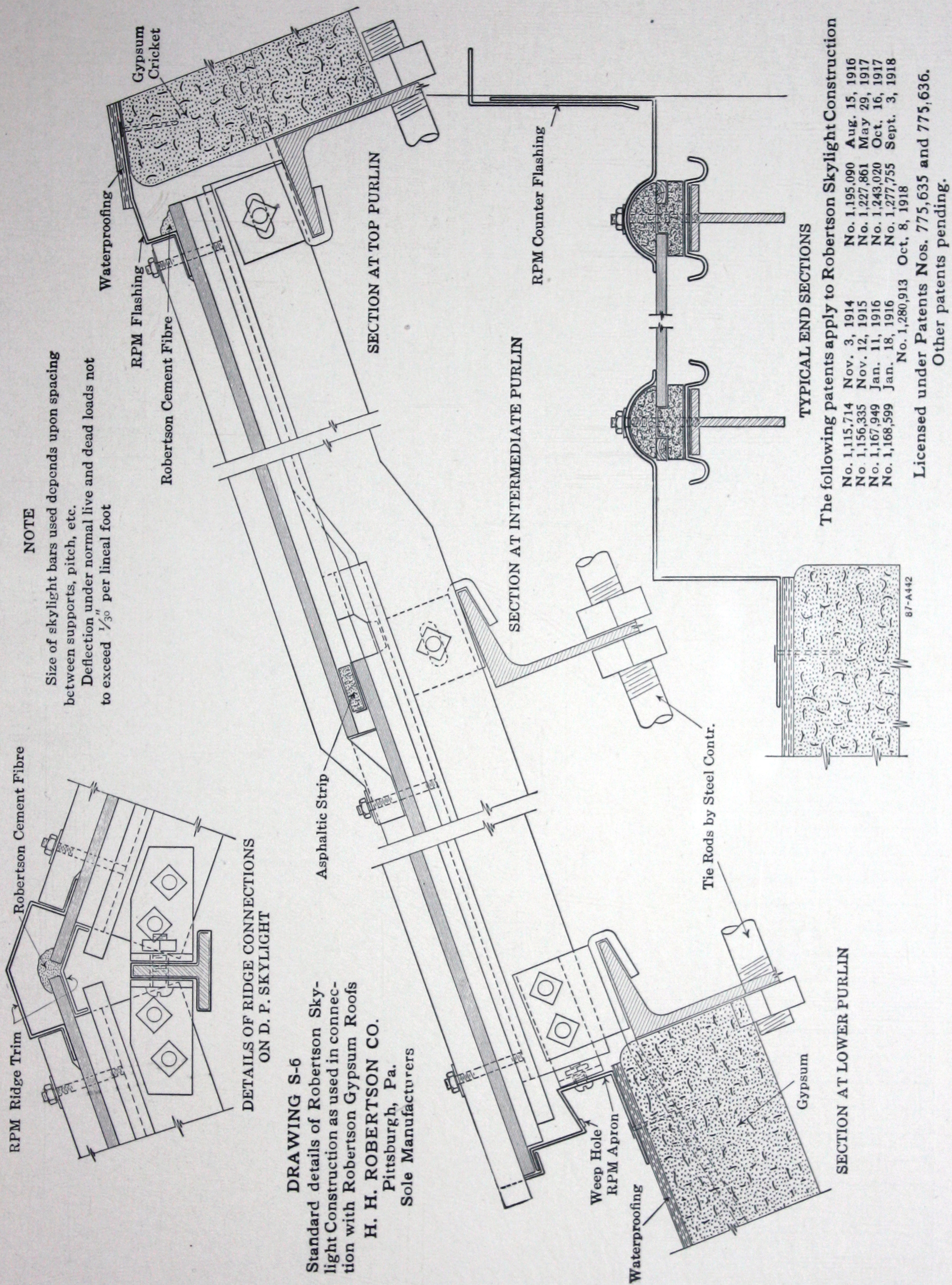
Other patents pending.



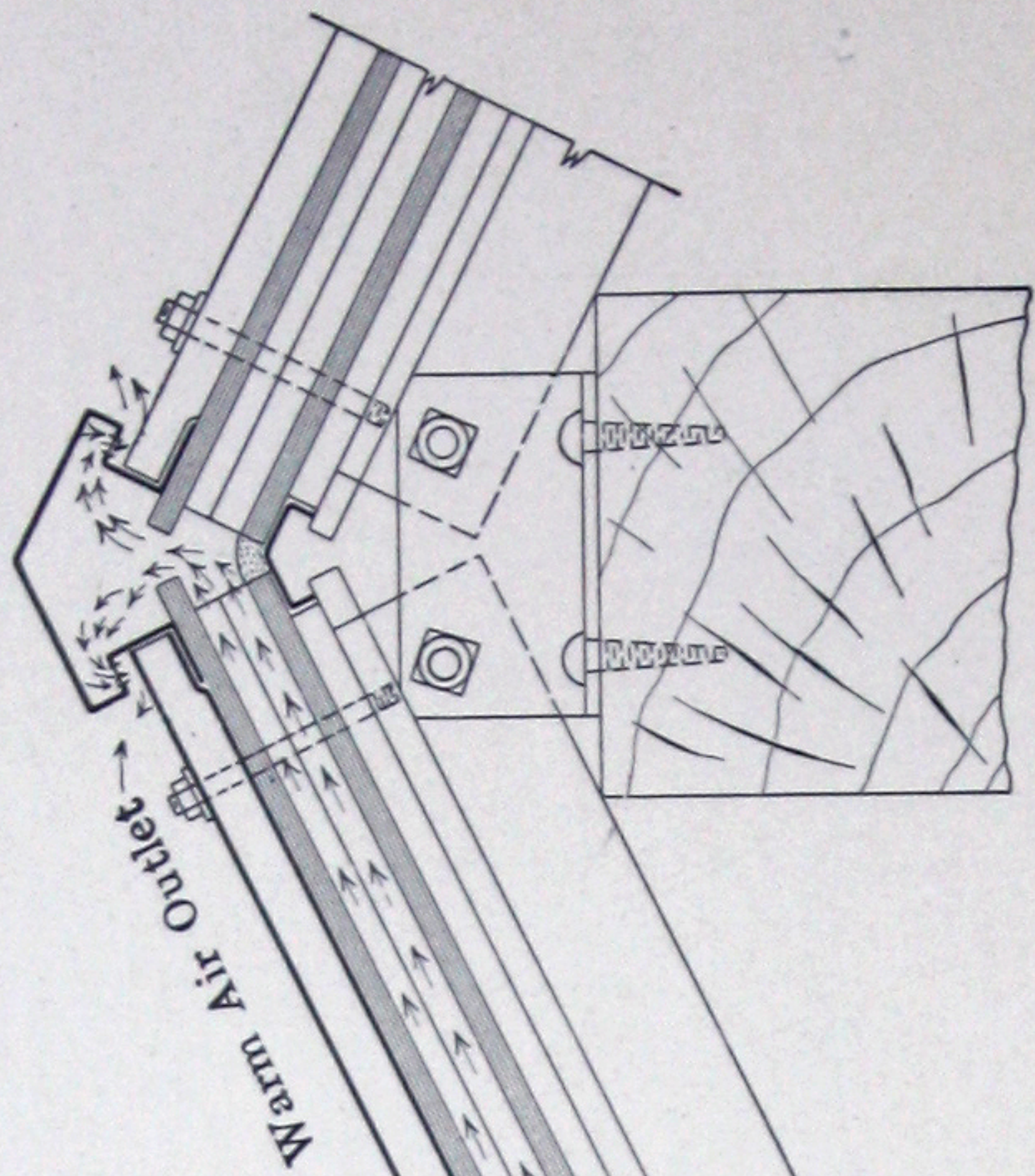
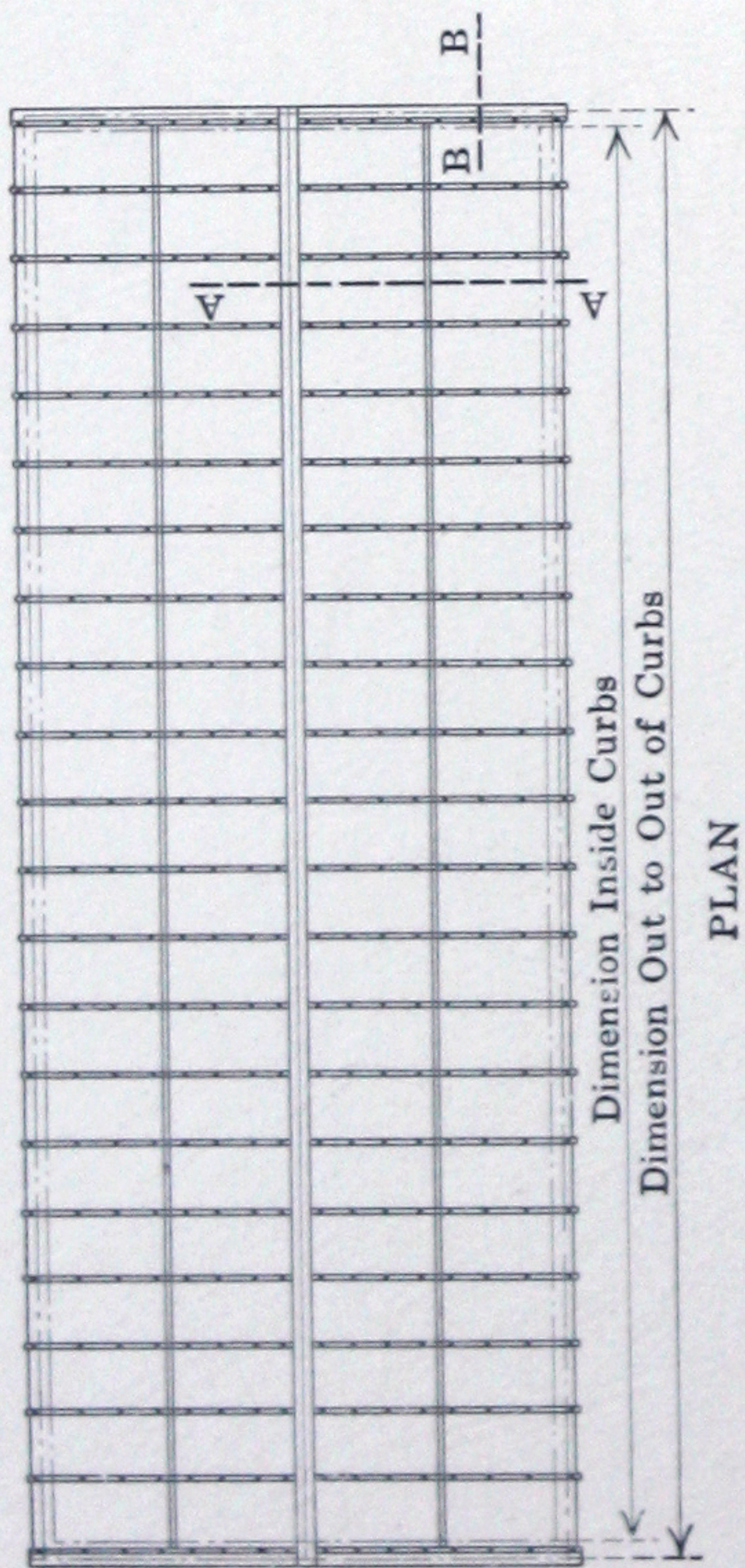
SIDE CURB FINISH

LOWER CURB FINISH

87-081



DRAWING S-7
Standard details of Robertson Putty-
less Double-glazed Skylight Con-
struction
H. H. ROBERTSON CO.
Pittsburgh, Pa.
Sole Manufacturers



NOTE!

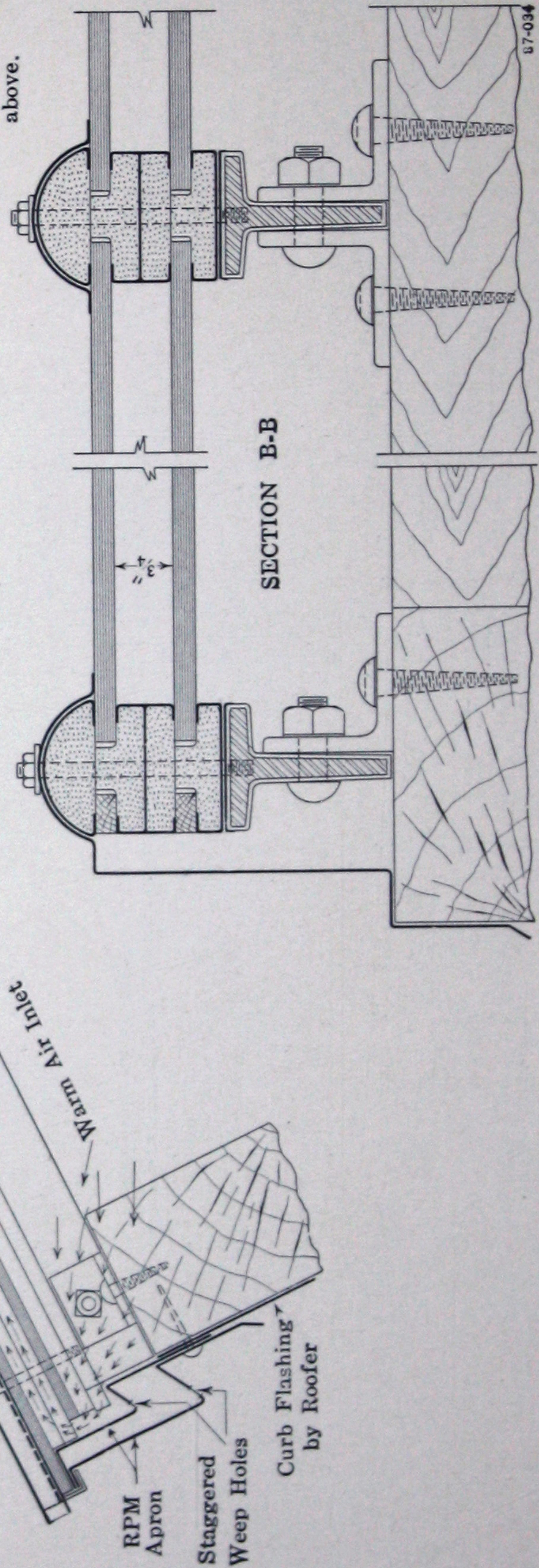
Size of Skylight Bar used depends upon spacing between Supports, Pitch, Etc. Deflection Under Normal Live and Dead Loads not to Exceed $\frac{1}{30}$ " per Lin. Ft. of Span

Note: The Sheet Metal Parts shown on this Drawing, can be either from RPM Galvanized Iron, or Copper.

Note: Interior Gutters and Conductors, to Lead Collected Condensation away from the Base of Skylights (Particularly when Double-Glazed), are always preferable to letting it escape through Weep-Holes in the Aprons as shown above.

SECTION A-A

Warm Air Inlet

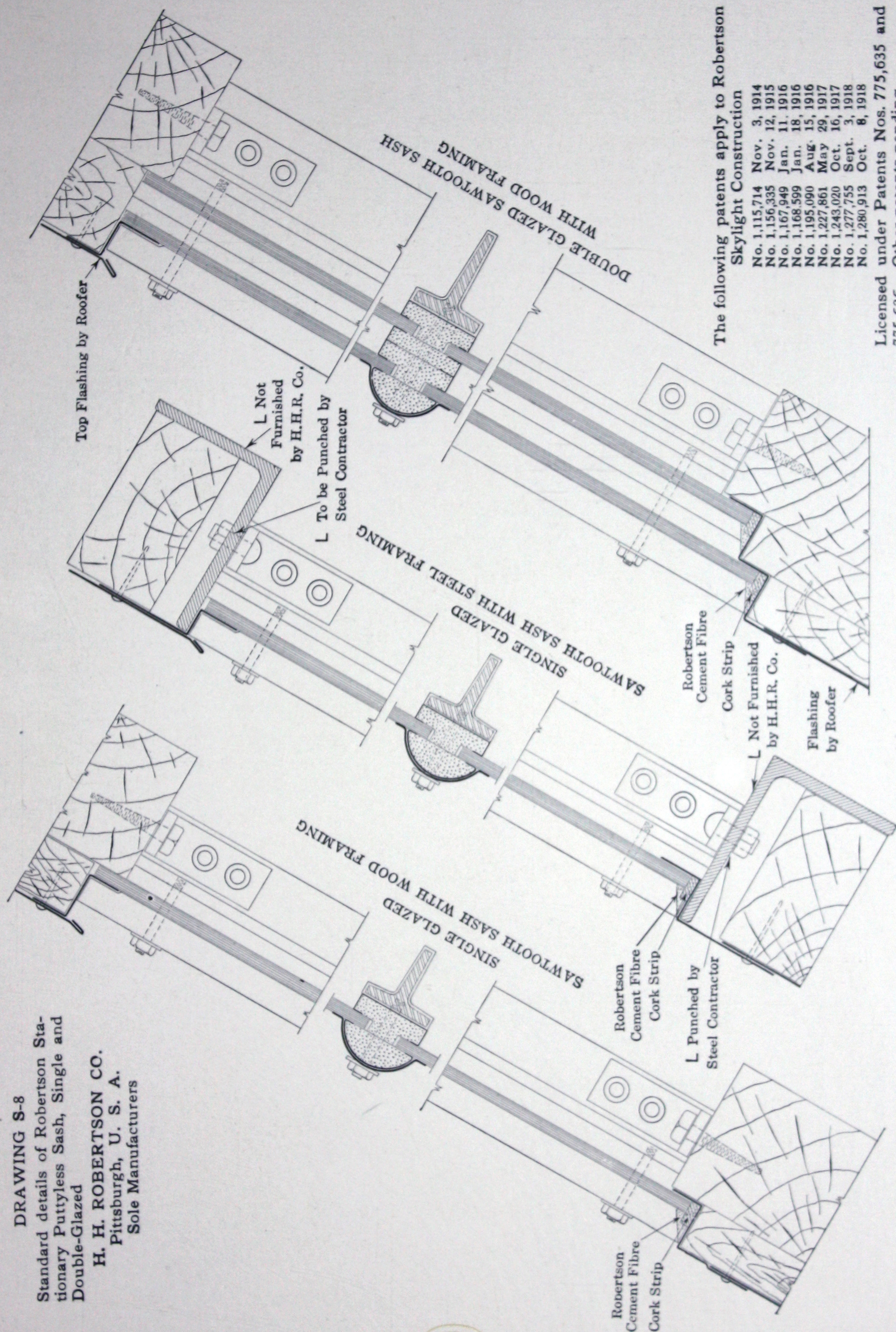


The following patents apply to Robertson Skylight Construction

No. 1,115,714	Nov. 3, 1914
No. 1,156,335	Nov. 12, 1915
No. 1,167,949	Jan. 11, 1916
No. 1,168,599	Jan. 18, 1916
No. 1,195,090	Aug. 15, 1916
No. 1,227,861	May 29, 1917
No. 1,243,020	Oct. 16, 1917
No. 1,277,755	Sept. 3, 1918
No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending

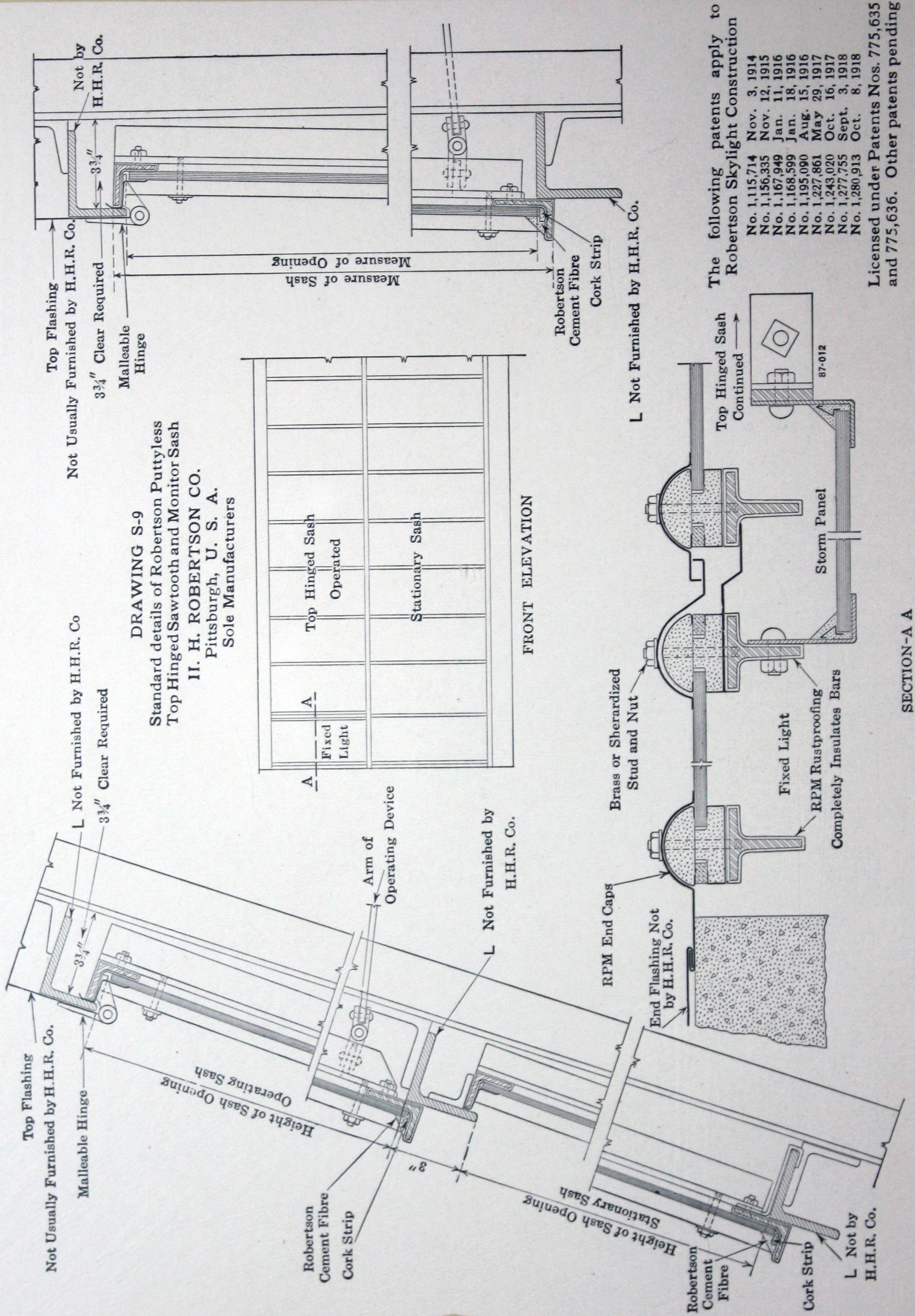
DRAWING S-8
Standard details of Robertson Stationary Puttyless Sash, Single and Double-Glazed
H. H. ROBERTSON CO.
Pittsburgh, U. S. A.
Sole Manufacturers



The following patents apply to Robertson Skylight Construction

No. 1,115,714	Nov. 3, 1914
No. 1,156,335	Nov. 12, 1915
No. 1,167,949	Jan. 11, 1916
No. 1,168,599	Jan. 18, 1916
No. 1,195,090	Aug. 15, 1916
No. 1,227,861	May 29, 1917
No. 1,243,020	Oct. 16, 1917
No. 1,277,755	Sept. 3, 1918
No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending.

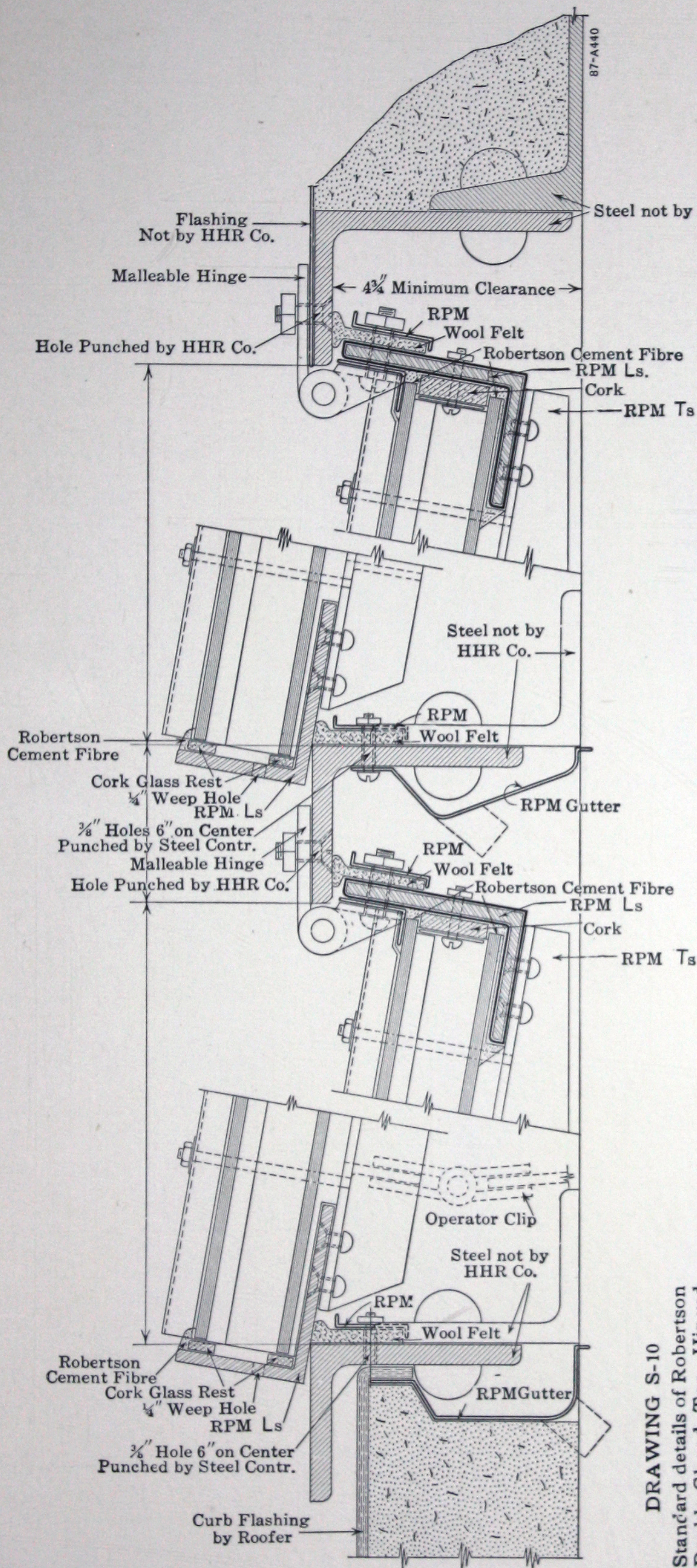


The following patents apply to Robertson Skylight Construction

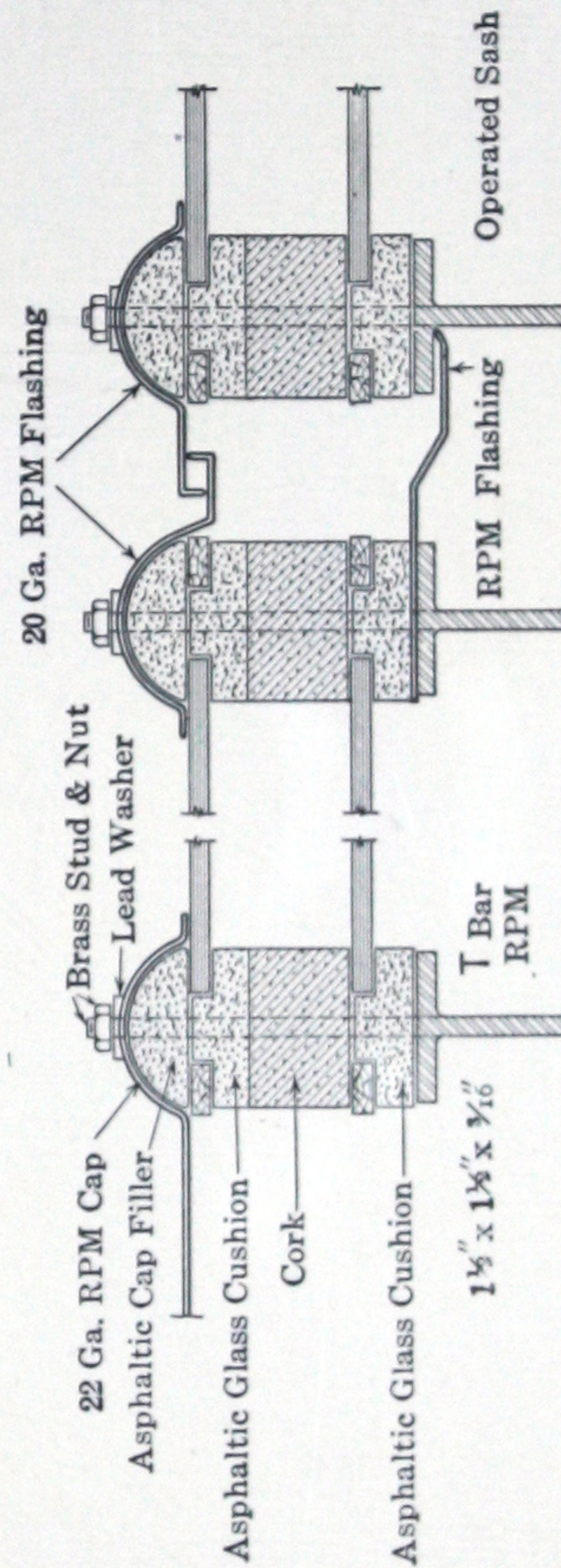
No. 1,115,714	Nov. 3, 1914
No. 1,156,335	Nov. 12, 1915
No. 1,167,949	Jan. 11, 1916
No. 1,168,599	Jan. 18, 1916
No. 1,195,090	Aug. 15, 1916
No. 1,227,861	May 29, 1917
No. 1,243,020	Oct. 16, 1917
No. 1,277,755	Sept. 3, 1918
No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending





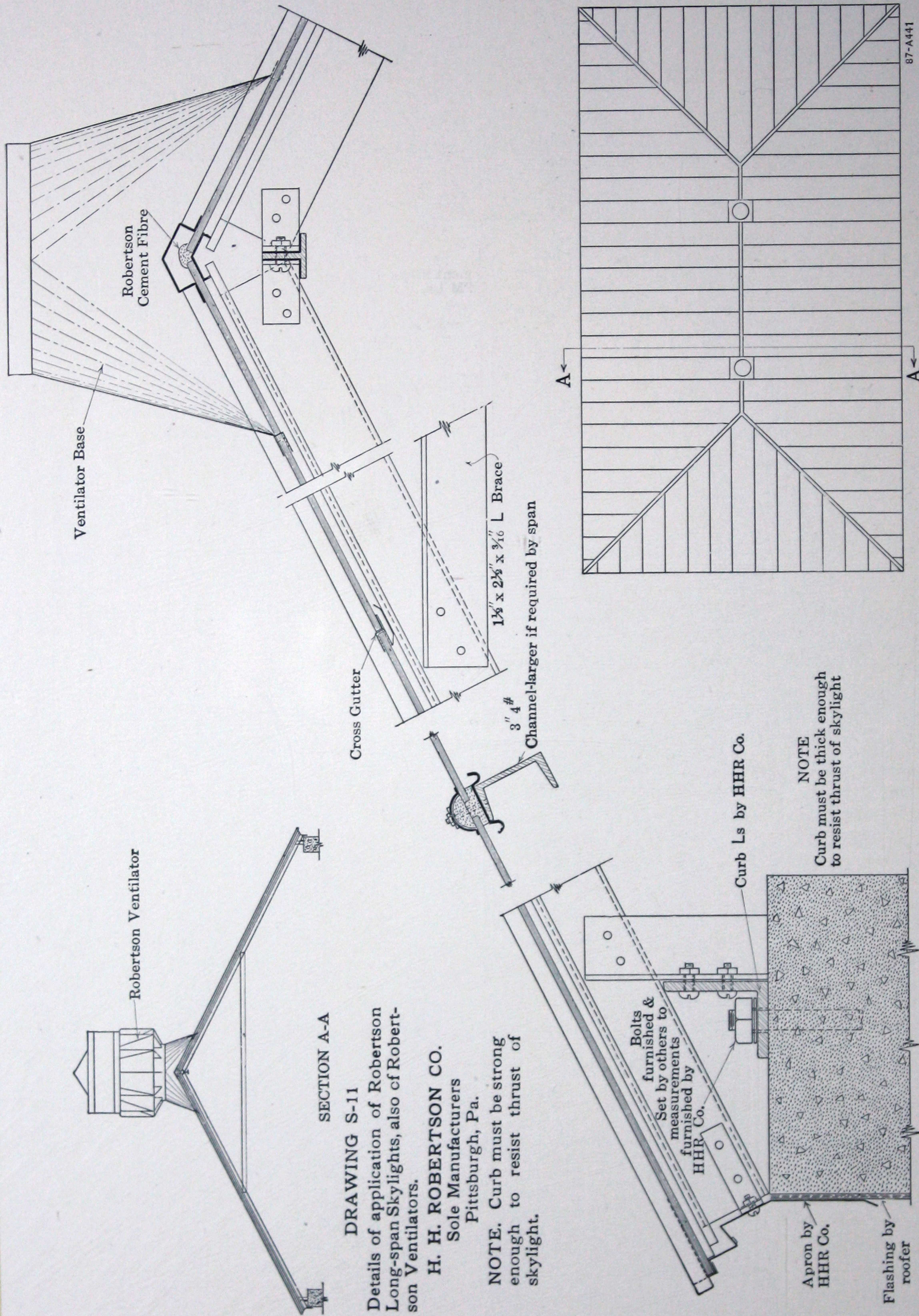
DRAWING S-10
Standard details of Robertson
Double-Glazed Top Hinged
Sash Construction
H. H. ROBERTSON CO.
Pittsburgh, Pa.
Sole Manufacturers



STATIONARY END PANEL
Storm Panel Shown on Drawing No. S-9

The following patents apply to
Robertson Skylight Construction

No. 1,115,714 Nov. 3, 1914
No. 1,156,335 Nov. 12, 1915
No. 1,167,949 Jan. 11, 1916
No. 1,168,599 Jan. 18, 1916
No. 1,195,090 Aug. 15, 1916
No. 1,227,861 May 29, 1917
No. 1,243,020 Oct. 16, 1917
No. 1,277,755 Sept. 3, 1918
No. 1,280,913 Oct. 8, 1918
Licensed under Patents
Nos. 775,635 and 775,636.
Other patents pending.



The following patents apply to Robertson Skylight Construction

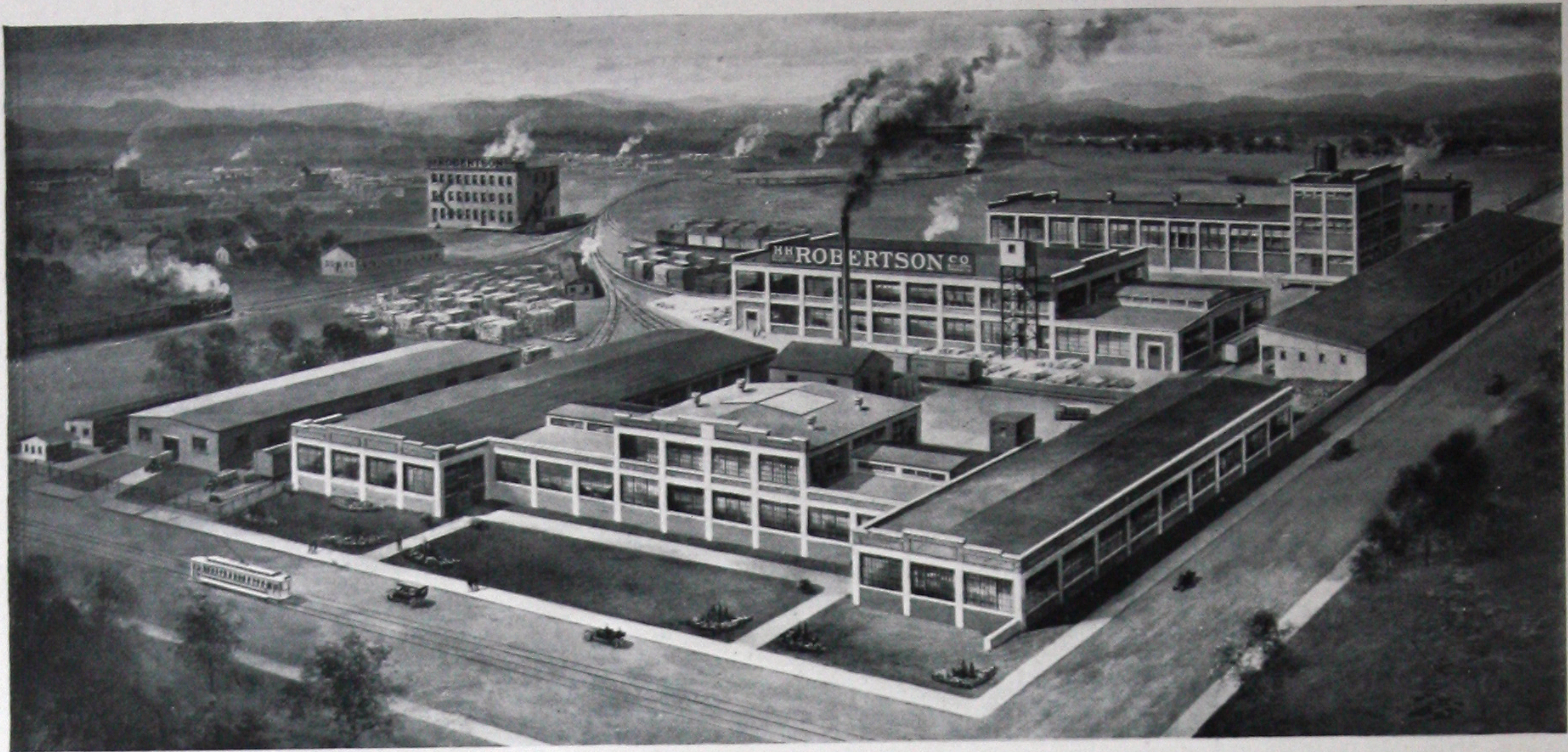
No.	Date	No.	Date	No.	Date
No. 1,115,714	Nov. 3, 1914	No. 1,168,599	Jan. 18, 1916	No. 1,243,020	Oct. 16, 1917
No. 1,156,335	Nov. 12, 1915	No. 1,195,090	Aug. 15, 1916	No. 1,277,755	Sept. 3, 1918
No. 1,167,949	Jan. 11, 1916	No. 1,227,861	May 29, 1917	No. 1,280,913	Oct. 8, 1918

Licensed under Patents Nos. 775,635 and 775,636. Other patents pending.

Partial List of Users of Robertson Glazing Construction

Acme Motor Truck Company . . .	Cadillac, Mich.	Oldbury Electro-Chemical Co. .	Niagara Falls, N. Y.
American Cellulose & Chemical Mfg. Co.	Cumberland, Md.	O'Neill Iron Works	Buffalo, N. Y.
American Locomotive Company	Pittsburgh and Schenectady	Pacific Mills, Ltd.	Ocean Falls, B. C.
American Smelting & Refining Company	Murray, Utah	Packard Motor Car Company . .	Detroit, Mich.
American Steel & Wire Company .	Worcester, Mass.	Pampanga Factory	Phillipine Islands
Armour & Company	So. Omaha, Neb.	Pennsylvania Railroad Co. . .	Numerous Locations
Baltimore Dry Dock & Shipbuilding Co.	Baltimore, Md.	Pennsylvania Salt Mfg. Co. . .	Wyandotte, Mich.
Bessemer Gas Engine Co.	Grove City, Pa.	Philadelphia Electric Co., Power Plant	Chester, Pa.
Bethany College	Bethany, W. Va.	Pierce-Arrow Motor Car Company	Buffalo, N. Y.
Bethlehem Steel Co.	So. Bethlehem, Pa.	Public Service Corporation . .	Newark, N. J.
Boston Cons. Gas. Co.	Everett, Mass.	Riter-Conley Company	Leetsdale, Pa.
California Peach Growers Ass'n. .	Kingsburg, Calif.	Roessler-Hasslacher Chemical Co.	Perth Amboy, N. J. and St. Albans, W. Va.
Jos. Campbell Co.	Camden, N. J.	Rome Locomotive & Machine Co. .	Rome, N. Y.
Chapman Valve Mfg. Co.	Indian Orchard, Mass.	Samson Motor Company	Pittsburgh, Pa.
Charleston Museum	Charleston, S. C.	Savannah Auditorium	Savannah, Ga.
Cleveland, Ohio, School Buildings.	Cleveland, Ohio	Saxon Motor Car Corporation . .	Detroit, Mich.
Court House	Superior, Wis.	Scott Paper Co., Chester Paper Mill .	Chester, Pa.
Cosden Company	Tulsa, Okla.	Security Bank & Trust Co., Bank Bldg.	Wheeling, W. Va.
Davison Chemical Company	Baltimore, Md.	Shell Oil Company	San Francisco, Calif.
Detroit Edison Co., The	Detroit, Mich.	Sizer Forge Company	Buffalo, N. Y.
Detroit Pressed Steel Co.	Detroit, Mich.	Southern Pacific R. R. Co., Ten Shop Bldgs.	Torrance, Calif.
Denver Gas & Electric Co.	Denver, Colo.	Standard Acid Works, Inc. . . .	Baltimore, Md.
Dodge Brothers Company	Detroit, Mich.	Stauffer Oil Company	San Francisco, Calif.
Euclid and Mall Theatres	Cleveland, Ohio	John K. Stewart Buildings .	Long Island City, N. Y.
Firestone Tire & Rubber Co.	Akron, Ohio	Strawbridge & Clothier	Philadelphia, Pa.
Grant Motor Car Corporation	Findlay, Ohio	Sugar Mills (4) San Domingo, Cuba and Phillipine Islands	
Guaranty Silk Company	Nanticoke, Pa.	Terminal R. R. Ass'n. of St. Louis .	St. Louis, Mo.
Gulf Sulphur Company	Big Hill, Texas	Transue & Williams Steel Forging Corp'n.	Alliance, Ohio
Hawaiian Fertilizer Company	Honolulu, H. I.	Traymore Hotel	Atlantic City, N. J.
T. F. Herbert & Company	Nashville, Tenn.	Union Iron Works (Bethlehem Steel Co.)	San Francisco, Calif.
Hibbing Library	Hibbing, Minn.	Union Pacific R. R. Co., Shop Bldgs..	Omaha, Neb.
Indianapolis Union Station	Indianapolis, Ind.	Union Tank Line Company	Olean, N. Y.
Inland Steel Company	Indiana Harbor, Ind.	U. S. Government, Drill Halls . .	Norfolk, Va.
Illinois Steel Company	Gary, Ind.	U. S. Government, Marine Corps .	Quantico, Va.
Liberty Steel Company	Warren, Ohio	U. S. Government, Navy Yards .	Numerous Locations
Maltosia Roof Garden	Buffalo, N. Y.	U. S. Government, Nitrate Plants .	Sheffield, Ala.
Matthiesen & Hegeler Zinc Co. . . .	La Salle, Ill.	U. S. Government, Storehouses .	Hampton Rds., Va.
Mead Pulp & Paper Co., Paper Mill	Chillicothe, Ohio	University of Illinois	Urbana, Ill.
Michigan State Normal College . .	Ypsilanti, Mich.	University of Kansas	Lawrence, Kan.
Michigan State Telephone Co. . . .	Detroit, Mich.	University of Nebraska	Lincoln, Neb.
Minnesota State Historical Building	St. Paul, Minn.	University of West Virginia .	Morgantown, W. Va.
Monongahela Valley Traction Co. .	Fairmont, W. Va.	Viscose Company, The	Marcus Hook, Pa.
Sam'l L. Moore & Sons Corp. (Bethlehem Steel Co.)	Elizabethport, N. J.	John Wanamaker	Philadelphia, Pa.
National Transit Pump & Machine Co. .	Oil City, Pa.	Western Electric Co., Inc. . . .	Chicago, Ill.
Nekoosa-Edwards Paper Co.	Port Edwards, Wis.	Westinghouse Electric & Mfg. Co. .	Pittsburgh, Pa.
N. Y. C. & H. R. Ry. Co.	Gardenville, N. Y.		
Normal School	Pittsburg, Kan.		





HH ROBERTSON CO

BUILDING PRODUCTS BUILDING PRODUCTS

FORMERLY ASBESTOS PROTECTED METAL COMPANY
PITTSBURGH

For Canada, H. H. ROBERTSON CO., Ltd.
Sarnia, Toronto, Montreal and Vancouver

FACTORIES: AMBRIDGE, PA., AKRON, N. Y., SARNIA, CANADA

OFFICES AND AGENCIES

ALLENTOWN, PA.	448 Union Street	KANSAS CITY, MO.	Bryant Bldg.
BALTIMORE, MD.	415 Equitable Bldg.	MINNEAPOLIS, MINN.	609-11 S. Fifth St.
BIRMINGHAM, ALA.	824 Brown-Marx Bldg.	NASHVILLE, TENN.	922 Stahlman Bldg.
BOSTON, MASS.	50 Congress St.	NEW ORLEANS, LA.	832 Perdido Bldg.
BUFFALO, N. Y.	908 Mutual Life Bldg.	NEW YORK, N. Y.	170 Broadway
CHICAGO, ILL.	633 Railway Exchange Bldg.	PHILADELPHIA, PA.	Real Estate Trust Bldg.
CINCINNATI, OHIO	2504 Union Central Bldg.	PITTSBURGH, PA.	First National Bank Bldg.
CLEVELAND, OHIO	701 Union Bldg.	PORTLAND, ORE.	271 Hawthorne Bldg.
DENVER, COLO.	1633 Tremont St.	SALT LAKE CITY, UTAH	609 McIntyre Bldg.
DETROIT, MICH.	1858 Penobscot Bldg.	SAN FRANCISCO, CALIF.	1007 Hobart Bldg.
EASTON, PA.	233 Ferry Street	SCRANTON, PA.	Board of Trade Bldg.
HOUSTON, TEXAS	3118 Harrisburg Blvd.	SEATTLE, WASH.	Pioneer Bldg.
INDIANAPOLIS, IND.	503 Chamber of Comm. Bldg.	ST. LOUIS, MO.	1520 Boatman's Bank Bldg.
		WHEELING, W. VA.	Schmulbach Bldg.

FOREIGN OFFICES

HAVANA, CUBA	J. Henry Steinhart, P. O. Box 1070
LONDON, E. C. ENGLAND	Edw. Le Bas & Co., Dock House, Billiter Street
PARIS, FRANCE	L. Messinesi, 19 Avenue Duquesne

LIST OF ROBERTSON PRODUCTS

ROBERTSON PROCESS METAL

Flat, Corrugated and Beaded Sheets for Roofing and Siding	Flashings, Ridge Caps and Louvres Gutters and Downspouts	Ventilators Skylights	Lath
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ROBERTSON PROCESS GYPSUM

Poured-in-Place Roofs and Floors	Pre-Cast Roof Slabs
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ROBERTSON PROCESS ASPHALT

Built-up Roofing	Protective Coatings	Saturation Compounds
Roll Roofing	Paving Expansion Joint	Insulation Compounds
Slate Surfaced Roof Roofing	Plastic Cements	Mineral Rubber
Slate Surfaced Shingles		Battery Sealing Compounds

ROBERTSON PROCESS SPECIALTIES

Road Fabric (welded)	Wallbrite
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